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Proceedings of Conference on RHEUMATIC FEVER

Washington, D. C.
October 5–7, 1943

UNITED STATES DEPARTMENT OF LABOR

CHILDREN'S BUREAU
PUBLICATION 308

UNITED STATES DEPARTMENT OF LABOR

Frances Perkins, *Secretary*

CHILDREN'S BUREAU — Katharine F. Lenroot, *Chief*

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State, Federal, and National Agencies Represented

State agencies.

Arizona: State Board of Health, Division of Maternal and Child Health, Phoenix.

California: State Department of Public Health, Crippled Children's Services, San Francisco.

Connecticut: State Department of Health, Division of Crippled Children, Hartford.

Delaware: State Board of Health, Services for Crippled Children, Dover.

District of Columbia: Health Department of the District of Columbia, Bureau of Maternal and Child Welfare, Washington.

Illinois: University of Illinois, Division of Services for Crippled Children, Springfield.

Iowa: State Board of Education, Crippled Children's Services, Iowa City.

Maine: State Department of Health and Welfare, Division of Medical Service, Augusta.

Maryland: State Department of Health, Service for Crippled Children, Baltimore.

Massachusetts: State Department of Public Health, Services for Crippled Children, Boston.

Michigan: Crippled-Children Commission, Lansing.

Minnesota: State Department of Social Security, Bureau for Crippled Children, St. Paul.

Missouri: University of Missouri, State Crippled Children's Service, Columbia.

Montana: State Board of Health, Division of Crippled Children, Helena.

Nebraska: State Board of Control, Services for Crippled Children, Lincoln.

New Jersey: Crippled Children Commission, Trenton.

New York: State Department of Health, Division of Maternity, Infancy, and Child Hygiene, Albany.

Oklahoma: Commission for Crippled Children, Oklahoma City.

Rhode Island: State Department of Health, Bureau of Child Hygiene, Providence.

South Carolina: State Board of Health, Division of Crippled Children, Columbia.

Utah: State Department of Health, Bureau of Maternal and Child Health, Salt Lake City.

Virginia: State Department of Health, Crippled Children's Bureau, Richmond.

Washington: State Department of Health, Division of Maternal and Child Hygiene, and Crippled Children's Service, Seattle.

Wisconsin: State Department of Public Instruction, Bureau for Handicapped Children, Madison.

Federal agencies.

Bureau of Medicine and Surgery, Department of the Navy, Washington, D. C.

Children's Bureau, United States Department of Labor, Washington, D. C.

Division of Vital Statistics, Bureau of the Census, United States Department of Commerce, Washington, D. C.

Office of the Surgeon General, War Department, Washington, D. C.

Office of Vocational Rehabilitation, Federal Security Agency, Washington, D. C.

Selective Service System, 21st and C Streets, NW., Washington, D. C.

United States Office of Education, Federal Security Agency, Washington, D. C.

United States Public Health Service, Federal Security Agency, Bethesda Station, D. C.

National voluntary agencies and associations.

American Academy of Pediatrics, New York, N. Y.

American Association of Medical Social Workers, Chicago, Ill.

American Association of Social Workers, New York, N. Y.

American Heart Association, New York, N. Y.

American Occupational Therapy Association, New York, N. Y.

Child Welfare League of America, New York, N. Y.

Commonwealth Fund, New York, N. Y.

Metropolitan Life Insurance Co., New York, N. Y.

Milbank Memorial Fund, New York, N. Y.

National Association of Colored Graduate Nurses, Inc., New York, N. Y.

National Committee for Mental Hygiene, New York, N. Y.

National Congress of Parents and Teachers, Chicago, Ill.

National Council on Rehabilitation, New York, N. Y.

National Foundation for Infantile Paralysis, New York, N. Y.

National Organization for Public Health Nursing, New York, N. Y.

National Research Council, Washington, D. C.

National Society for Crippled Children of the United States of America, Inc., Elyria, Ohio.

National Tuberculosis Association, New York, N. Y.

Preface

Rheumatic fever is one of the most serious threats to the life and health of the Nation's children, but it is only within recent years that the seriousness of this disease has begun to be widely appreciated. Recognition of the problem has lagged, as might be expected with a disease so insidious, so long drawn out, and often so difficult to recognize. Our knowledge in this field is still very inadequate, but we know enough to realize that we must do something about it. We know that rheumatic fever causes more deaths among children of school age than any other disease. We know that, for every child who dies from this disease, many more are made ill for long months and that most children who survive attacks are left with permanent scarring of the heart. We know that nearly half a million children in this country have been or are being affected by rheumatic fever. We know that the results of childhood attacks of this disease often show up years later, crippling the earning capacities of countless thousands of adult workers.

Although doctors agree that the cause of rheumatic fever is still unknown and that there is yet no specific way to prevent its first appearance, proper care can do much to control the disease when it occurs and to help protect children who have recovered from one attack from getting another.

To help the States in providing such care, since 1940 some of the social-security funds appropriated by Congress for crippled children have been made available by the Children's Bureau each year for special State rheumatic-fever programs. The amount of Federal funds available is enough to take care of only a relatively few children. In order to make as good use as possible of these limited funds, it was decided that they should be used only in those States, and only in those areas within the States, where there was a demonstrated need and where it was possible to organize a program of good and complete care for children with rheumatic fever, including good medical, medical-social, and nursing services and facilities for adequate diagnostic, hospital, and sanatorial care, and aftercare. Such a program must make full use not only of the medical and hospital resources of the area but also of the many other local resources such as those of public-health units, social agencies, departments of education, and citizen groups.

The first State plan for a rheumatic-fever program—Oklahoma's—was approved by the Chief of the Children's Bureau in March 1940. By October 1943, 14 States had approved programs for the care of children with rheumatic fever (California, Connecticut, the District of Columbia, Idaho, Iowa, Maine, Maryland, Minnesota, Oklahoma, Rhode Island, South Carolina, Utah, Virginia, and Washington).[1]

Although the development of these programs has been gratifying, it must be remembered that, since services are provided for the most part to children living in only a few counties within the States, the vast majority of children with rheumatic fever in the United States are not yet being cared for under these programs. Only a small beginning has been made by the State and Federal Governments in tackling the problem of rheumatic fever in children.

[1] Rheumatic-fever programs for five other States, Michigan, Missouri, Montana, Nebraska, and Wisconsin, have been approved since October 1943.

Even such a small beginning, however, can be of great importance in demonstrating needs and in exploring ways of meeting them. The experience gained from these small programs must be carefully studied and evaluated if services for children with rheumatic fever are to be improved and expanded along sound lines. Consequently, a National conference on State rheumatic-fever programs was called by the Children's Bureau in October 1943 in order to offer an opportunity for an exchange of ideas on the administration of the State programs; to review medical, nursing, and social problems affecting the rheumatic child; to consider new developments in diagnosis and therapy; to explore needs for extension and improvement in the programs; and to discuss the adequacy of present facilities and services for meeting the needs of rheumatic children.

Besides representatives of the State agencies concerned in the programs, persons attending the conference included members of the Children's Bureau Advisory Committee on Services for Crippled Children, clinical investigators who have been working with rheumatic fever, and representatives of National professional and lay organizations concerned with the health and welfare of the rheumatic child.

In a 3-day conference the problems associated with all types of services for children with rheumatic fever could not, of course, be discussed exhaustively. Nevertheless, many phases of the problems have been discussed very thoughtfully. The proceedings of this conference are hereby submitted in published form in the hope that the combined experience and opinions of the members of the conference may be widely shared and used as a basis for further and more vigorous public action to control rheumatic fever.

MARTHA M. ELIOT, M. D.,
Associate Chief.

OCTOBER 6, 1943.

Proceedings of Conference on Rheumatic Fever

Martha M. Eliot, M. D., Associate Chief
Children's Bureau, United States Department of Labor,
Presiding

TUESDAY, OCTOBER 5, 1943—MORNING SESSION

OPENING REMARKS

[Dr. Eliot called the meeting to order in Miss Lenroot's absence and welcomed the assembly. The meeting was then turned over to Dr. Van Horn.]

DR. VAN HORN. The agenda for this conference were prepared at the suggestion of the various State agencies. Dr. Betty Huse of the Children's Bureau staff corresponded at some length with many of you and got suggestions regarding things you wanted to discuss. We have tried to group these together, although we know we haven't covered all of them. Almost everyone seems to be interested in rheumatic fever, and the response we have had has been very gratifying. I am quite sure it is no military secret that rheumatic fever is a menace not only to the civilian population but to the armed forces as well. We are extremely fortunate in having with us this morning several representatives from various branches of the military service. Colonel Rowntree has told me that it will be necessary for him to leave in a little while, so we have asked him to start off our session this morning.

NEW INFORMATION ON THE INCIDENCE OF RHEUMATIC FEVER

Selective-Service Findings

COLONEL ROWNTREE. The Selective Service appreciates the opportunity of meeting with you this morning and discussing the subject of the incidence of rheumatic fever and of rheumatic heart disease encountered in the examination of the registrants for the armed services during the past 3 years.

Registrants with acute, recurrent, or chronic rheumatic fever, or with rheumatic heart disease, are not acceptable for service in the fighting forces and are, therefore, classified as IV–F. During peacetime most of the registrants rejected

for these diseases were disqualified by the examining physicians of the local boards. In wartime, however, the majority of the rejections were made at induction stations of the armed forces.

Acute rheumatic fever is primarily a disease of childhood and of adolescence; hence, most registrants are past the high-incidence range of rheumatic fever. It is also a serious, painful, and disabling affliction usually confining the patient to bed. For these reasons, few, if any, registrants with acute rheumatic fever ever come up for examination. In consequence, the rejections for acute rheumatic fever are rare, whereas rejections for rheumatic heart disease—which is variously considered as a clinical manifestation, a complication, or a sequela of this disease—are much more frequent.

The results of a sampling survey undertaken in peacetime indicate that 7 cases of acute rheumatic fever and 355 cases of rheumatic heart disease were recorded in every 100,000 registrants examined. The disease was found relatively oftener among whites than among Negroes.

During the period of November 1940 through September 1941 cardiovascular defects accounted for 10 percent of all rejections at the local-board level and at the induction stations of the armed forces. The rheumatic nature of rheumatic heart disease was designated in only 7.3 percent of the total cardiovascular rejections. It is obvious, however, that valvular disease, which is recorded much more frequently, is commonly of rheumatic origin. The figures on rheumatic heart disease fall below the true level, since most reports recorded only valvular disease without indicating its rheumatic origin.

In wartime, the rejection rate for rheumatic heart disease is revealed as 340 per 100,000 registrants examined, representing 11 percent of the total cardiovascular rejections. These figures are based on the defects listed as the principal cause for rejection. It is obvious that some registrants with rheumatic heart disease were rejected because of some related or unrelated defect that was judged more serious.

In the teen-age group the prevalence rate for cardiovascular disease is of unusual interest. Figures based on a sample of 45,585 registrants showed a combined average of 310 per 100,000—330 for whites and 60 for Negroes.[1]

In considering the statistics assembled on cardiovascular rejections, it was the opinion of our Medical Division that functional elements were unduly emphasized, that rejections themselves were unusually high, and that the rheumatic origin of heart disease was understated. These opinions all find some support in a special cardiovascular survey[2] that was carried out under the auspices of the Subcommittee on Cardiovascular Disease of the National Research Council. This subcommittee consisted of outstanding, nationally known cardiologists: Dr. Paul D. White of Boston, Dr. Robert L. Levy of New York, Dr. William D. Stroud of Philadelphia, Dr. G. K. Fenn of Chicago, and Dr. William J. Kerr of San Francisco.

In all, some 4,994 rejectees were studied, of whom 2,476 were diagnosed as suffering from rheumatic heart disease, or approximately 50 percent of the total. The previous classification was confirmed in 82.1 percent of the cases and reclassification was effected in only 17.3 percent of the cases; that is, men were changed from IV–F to I–A classification and sent forward to the induction station. This survey reveals that rheumatic fever is responsible for approximately 50

[1] Col. Leonard G. Rowntree, Kenneth H. McGill, Thomas I. Edwards: Causes of rejection and the incidence of defects, J. A. M. A. **123**: 181 (September 25) 1943.

[2] Robert L. Levy, M. D., William D. Stroud, M. D., and Paul D. White, M. D.: Report of reexamination of 4,994 men disqualified for general military service, J. A. M. A. **123**: 937 (December 11) 1943.

percent of the total cardiovascular disorders that are disqualifying registrants for military service.

Another set of figures unquestionably will be of interest, those having to do with the IV–F pool of rejectees. On July 1, 1943, it was estimated that 2,976,000 registrants aged 18 to 37 were in class IV–F; of those, 190,100 were so classified because of cardiovascular reasons. If we apply the findings of the special commitee of the National Research Council to these 190,100 men, it would appear that on last July 1 somewhere in the neighborhood of 95,000 would fall into the rheumatic-heart-disease group.

The figures presented here today have been assembled especially for this meeting. They are preliminary in nature and should in no way be considered as final.

DR. VAN HORN. Are there any questions?

DR. ROGERS. How did the 50 percent break down? Fifty percent, I understand, of the cardiovasculars were rheumatic.

COLONEL ROWNTREE. Yes; these are the figures. Rheumatic heart disease showed 2,476 cases, that is, 50 percent of the total number exempt. Mitral disease caused 60.6; the aortic disease 11.3; combined mitral and aortic, 25.4. Hypertension was responsible for 1,059, that is, 21 percent. Congenital heart disease, 183; neurocirculatory asthenia, 204; sinus tachycardia, 189. This final report has not been published. It will be released very shortly by Dr. White, Dr. Levy, and Dr. Stroud, so these figures should be considered confidential until they have been given release in the study.

DR. WHEATLEY. The 4,994 cases represent what?

COLONEL ROWNTREE. They represent cases taken from the complete pool of rejection.

DR. VAN HORN. Thank you again, Colonel Rowntree, for this very interesting discussion. We also have the honor of having with us a representative of the Surgeon-General's Office of the United States Army. I should like to present to you Gen. Hugh Morgan.

The Army Experience

GENERAL MORGAN. It seems to me very natural that you would be interested in knowing how much of a problem rheumatic fever presents for the armed forces. I shall try to give you some indication of its magnitude. I am glad to say that because of the age group involved and because of the activities of Colonel Rowntree's Selective Service, the problem is by no means as large as it might be.

First of all, you may be interested in knowing a little about the extent of the problem of rheumatic fever during World War I. With approximately 4 million men in the Army, 23,000 cases of acute articular rheumatism were reported; this would indicate that the disease occurred about three times per 1,000 men. That is a formidable incidence of any disease—3 per 1,000 per annum. I am pleased to tell you that the problem of rheumatic fever in the Army thus far is much less than it was in World War I, and I shall leave to you the explanation for that fact. In World War I, with a strength of about 4 million men, 10,000 cases of mitral insufficiency were diagnosed, and 3,000 of mitral stenosis; so that the rheumatic-heart problem was also in the foreground.

Colonel Rowntree has told you the basis for the Army's acceptance or rejection of individuals with rheumatic fever. The fact that the Army does not

accept for service men who have had more than one attack of rheumatic fever in the past excludes, of course, a great many people who will in the course of the following year or two come down with a recurrence of rheumatic infection. The Selective Service does accept for the Army men who have had a single attack of rheumatic fever, provided no sequelae are demonstrable.

Once in the Army, an individual who comes down with rheumatic fever and gives a history of a previous attack is discharged upon certificate of disability. An individual who has his first attack of rheumatic fever in the Army and experiences definite and permanent cardiac damage from that attack, is also discharged, regardless of the mildness or the severity of the cardiac complication. In practice this leaves the Army approximately one-third of the individuals who come down with an attack. With reference to that one-third—men who have had their first attack of rheumatic fever but have developed no permanent heart damage—after a prolonged period of hospitalization, these men are put on a probationary basis for a 6-month period with careful follow-up examinations before they are completely turned loose to the Army.

The present situation with regard to rheumatic fever in the Army is one of considerable interest, one that I think could have been predicted. Whenever we have had scarlet fever in the Army; whenever we have had infection of the upper respiratory tract, tonsillitis, bronchitis, sinusitis; whenever we have had infections that we associate with the hemolytic streptococcus, there we find rheumatic fever as a following development. Ninety percent of the cases of rheumatic fever that have been studied in one post in the Army give a history of previous infection of the upper respiratory tract or of scarlet fever. The infection of the upper respiratory tract precedes the development of rheumatic infection, usually by 2 or 3 weeks. The average actually was 16 days in this particular study, which was carried out by Lt. Col. Phil Hench.

The geographical distribution of rheumatic fever in the Army follows pretty closely the map on the bulletin board outside this room.[3] The greatest incidence of the disease has been in the Rocky Mountain States. It swings back with less intensity along the Great Lakes again to a higher incidence in the New England States. Actually the one difference with relation to its geographical distribution throughout the United States is that the point of greatest incidence at the present time is in the Rocky Mountain area, which now exceeds the incidence in the New England States. I am sure the people from New England will be glad to know that for once rheumatic fever is occurring in another part of the country to a greater extent than in New England.

In studying several hundred patients with this disease, Colonel Hench, Captain Coggeshall, and their associates have found that most of these individuals, about half of them, came from the Middle West, 20 percent from the South, and 20 percent from New England. They felt that a predominance of affected individuals came from rural rather than urban areas. They felt that they were able to conclude with some degree of accuracy that these individuals were perhaps from the lower economic groups. Personally, I am skeptical about these conclusions. It seems to me that we may very well get into difficulty if we try to draw conclusions when we are dealing with such small groups.

I am not at all certain that the Army's rheumatic-fever problem is in any sense different from the problem that exists throughout the United States in the civilian population of males between the ages of 18 and 45. I have talked at great length about this matter with people in General Simmons' preventive-medicine depart-

[3] This map is reproduced in *Rheumatic Fever in Children* published by the Metropolitan Life Insurance Co., New York, N. Y.

ment of the Surgeon General's Office. They are inclined to think that perhaps I am wrong and that somewhat more of a problem with regard to rheumatic fever exists in the Army than among men of the same age group in civil life.[4]

I think it is a matter of great interest that, with men brought together from all parts of the country, the same geographical distribution of the disease tends to be present in the Army as in civil life. Actually in the Army we may say that sanitation, hygiene, food, and medical care are very superior to what men, on the average, have been accustomed to in civil life. If this is so, it leads us to reevaluate the emphases we have placed on some of the factors that have to do with the development of this disease.

I wish to add at this point that Maj. Gen. Norman Kirk, the Surgeon General, is following the deliberations of this conference with keenest interest and he orders me to bring you his good wishes.

DR. VAN HORN. Thank you, General Morgan. We have with us this morning Comdr. Alvin Coburn, who represents the Surgeon General's Office of the United States Navy.

The Navy Experience

COMMANDER COBURN. In September 1939 the Microbiological Congress, including delegates from abroad, was held in New York. Many of the delegates were turned back in the middle of the ocean; others didn't even get started; but the British contingent came through. War was declared that week, as you recall, but the conference went on. One of the last speakers, from the Lister Institute, told about his studies on virus particles taken from rheumatic-fever patients. This speaker spent 10 minutes explaining why he thought his findings were not significant. During the last 5 minutes he painted a little picture of England as he saw it in the near future, indicating that England could not expect to do fundamental work in rheumatic fever for some time, and that the work would have to be carried on in this country.

But the United States Navy cannot undertake this task at present. Our job is to help win the war, and the fundamental work on rheumatic fever will have to be carried on by groups who are not confronted with war problems. In my opinion, the future of rheumatic fever depends on the results of fundamental work from the laboratory. The Navy's rheumatic-fever problem is a purely practical one, and I must therefore limit myself to that side of the discussion. We get a great many patients with rheumatic fever. I have no figures for you because I have just come from a place where no figures were available, but yesterday afternoon I asked if I could see what one station was reporting: that one station alone had reported 427 first attacks of rheumatic fever since January 1, 1943.

I do not know what the total figures are, but conditions in the Navy, during the period of training, are highly conducive to the development of rheumatic fever. With 30,000 men crowded together in a Northern camp near the water, epidemics of respiratory diseases must be expected, and in their wake, rheumatic fever.

You may wonder where these rheumatic-fever patients come from. A few enter the Navy with advanced heart disease, aortic insufficiency, mitral stenosis, tremendous hearts. They were turned down by draft boards from California to Chicago but managed to hit Cleveland on a day when one draft board was very crowded, with 50 typewriters going in the room. They slipped through

[4] James Stevens Simmons, M. D., Brigadier General, United States Army, Director of the Preventive Medicine Division, Office of the Surgeon General, Washington, D. C. From A. J. P. H. (August 1943) p. 931.

and were very proud of it. There is a larger group of men who have had no evidence of heart disease in the past but have a definite or suggestive history of rheumatic fever. The largest group in our experience has comprised boys from the South and West, chiefly from the rural districts, who have no past personal or family history of rheumatic fever. They get their first attacks during the first spring in the North shortly after their first hemolytic streptococcal infection.

Rheumatic fever in the Navy, as in the Army, follows epidemic outbreaks of upper-respiratory-tract infections, associated with the hemolytic streptococcus. The closer we investigate, the higher the percentage of histories of respiratory infections we get. Ill-defined infections of the upper respiratory tract that occur frequently among Navy men are classified by the convenient name of "catarrhal fever," or "cat fever." Most of our patients show on their health records an attack of catarrhal fever about 2 or 3 weeks before the rheumatic symptoms appear.

I do not know whether there are any specific factors in the Navy that may prove especially conducive to the development of rheumatic fever other than those conducive to the contracting of respiratory infections. That is a very difficult matter to evaluate. I have been impressed with one possible man-made factor, and I pass it on to you for what it is worth, although I can't give you any good evidence that it is conducive to rheumatic fever. It has to do with the administering of sulfonamides for minor respiratory-tract infections. We have observed a number of people, both in civilian life and in the Navy, who have lived in an environment in which they contracted many streptococcal infections as children and young adults, and later have had a streptococcal throat infection that was not particularly severe but was treated with one of the sulfonamides. After that illness, the individual developed his first attack of rheumatic fever.

I recall one particular patient who in 1936 developed tonsillitis (a frequent occurrence for him) and decided that this time he would like to try the new sulfonamide drug. He came to the hospital, was treated, went home, and came back 2 weeks later with an initial rheumatic attack characterized by severe pancarditis. In the Navy we have seen about 40 such individuals, men who have passed safely through an age group in which they might have been expected to develop rheumatic fever and who have come from large cities in the East in which the incidence of rheumatic fever is high, but who have escaped the disease until treated with sulfanilamide for a throat infection.

While speaking of sulfanilamide, I should like to stress the fact that we have observed patients in whom rheumatic fever was not recognized and to whom sulfanilamide was given for several days. This was followed by extremely severe attacks. I think, inasmuch as the sulfonamide problem is going to be brought up on Wednesday, it is pertinent to mention that if sulfanilamide is given during rheumatic fever, the disease can be expected to be markedly aggravated.

The clinical picture as we have seen it in the Navy has been no different from that seen in civil life. All the familiar manifestations have appeared. The only one that we haven't seen frequently is chorea. Only one case of chorea occurred in our group in the Navy, as was to be expected, since our young men are over 17. The one patient who did develop chorea was 17 years of age.

The problem of care of these men after the attacks has not been solved. We should like very much to provide care for convalescents; it seems to me that is a problem for the Army, Navy, and the Veterans' Administration to work out. We now in the Navy are able to send our patients with tuberculosis

to the Veterans' Administration when they are discharged. If we could have a convalescent hospital for men with rheumatic fever, it would be helpful both to the Navy and to the patients. The policy regarding disposition of these men is not settled. Our present concept is that if the individual has had recurrent rheumatic fever or rheumatic heart disease before enlistment, he should be discharged. If he gets recurrent rheumatic fever or develops incapacitating heart disease while he is in service, he should be discharged. But if he can be of use to the Navy in any capacity, we ought to make use of him, and we now have the privilege of recommending limited duty. We can also send him to a section of the country where the climate will be beneficial.

We in the Navy are presented with three problems so far as rheumatic fever is concerned. One is the prevention of streptococcal infections; the second, the prevention of rheumatic fever in the people who contract streptococcal infections; the third, the prevention of rheumatic heart disease in the people who have developed rheumatic fever. These are challenges that the Navy is prepared to accept, and I hope that we in medicine can deal with them as well as the line officers are dealing with their problems at sea.

DR. VAN HORN. General Morgan and Commander Coburn have certainly given us plenty of food for thought. Are there any questions? Or do you care to make any additional comments?

DR. JONES. I think General Morgan and Commander Coburn have said the same things about respiratory streptococcal infection that I have encountered in my own experience. I wonder, however, if either of them could tell us whether the rheumatic fever that has developed in areas where rheumatic fever is not supposed to be common has seemingly had the same factor of association with streptococcal infection. It seems to me that that is of some importance in the problem of the ultimate evaluation of factors in rheumatic fever. I know from having had numerous letters from friends in the service that some cases of rheumatic fever have occurred in areas where the disease is uncommon and that some have been found in the native population, particularly in the North African theater.

DR. SWIFT. May I present my experience in World War I, in which 23,000 cases were reported? I was stationed with the British Army for a year. I was interested in rheumatic fever at that time and I talked with practically all the consultants in the British Army in France. It turned out that rheumatic fever was comparatively rare among the British troops in France, whereas it was rather common in the training areas in Great Britain. When I returned to our own Army, I had opportunity to study the same problem, because I was successively consultant to the First Corps, the First Army, and the Third Army, and I can say, without official confirmation, that rheumatic fever was not a serious problem among our troops in France. This has a bearing on Dr. Duckett Jones' question. Troops are living under different conditions when on active duty from those under which they live when they are in training. Our experience with rheumatic fever in this war, as I think General Morgan and Commander Coburn will agree, has been largely among troops who are in training. Is that not true?

DR. VAN HORN. Thank you, Dr. Swift. General Morgan, would you like to comment?

GENERAL MORGAN. I have seen rheumatic fever in American troops in North Africa, in Egypt, in India, and in Australia. As to whether it is usually preceded by infection of the upper respiratory tract, the answer is yes, almost invariably. Of course, I must in all honesty raise this point, too, that, if you go into hospital wards in any Army hospital or any civilian hospital, for that matter,

and ask patients whether or not they have had a cold or any infections of the upper respiratory tract in the last 6 weeks, the answer is preponderantly yes.

In the Rocky Mountain States, where rheumatic fever is widespread, the incidence of preceding upper-respiratory-tract infection and respiratory-tract streptococcal infection is 90 percent. I am not sure, however, whether that incidence wouldn't also obtain in a good many other conditions that bring other people under examination. I am told that colds, coryza of the upper respiratory tract, and irritations are extremely common in that region with its dry air and dust.

However, the answer to the question is yes, and that holds both for patients seen in this country and overseas; the preceding respiratory-tract infection or streptococcal infection almost invariably has occurred. It is interesting that rheumatic heart disease was also seen in the Egyptian, the Persian, and the Chinese armies. Rheumatic fever is extraordinarily wide in distribution. I do think, however, that in those countries the manifestations of acute rheumatic fever are probably not those we would designate as typical. I was informed—I have no way of checking the accuracy of this information—that polyarthritis in the Middle East and in Asia is not a very conspicuous part of the disease. Nevertheless, the most extraordinary example of mitral stenosis that I think I have ever seen, in terms of physical signs, was in a young Chinese aviator in a hospital in the Crimea.

COMMANDER COBURN. I haven't anything to add because my sea experience has been limited to Brooklyn and Norfolk.

DR. VAN HORN. Are there other comments and questions?

DR. MCCULLOCH. I should like to ask General Morgan whether the incidence of other diseases, such as tuberculosis, scarlet fever, and measles, parallels the high incidence of rheumatic fever in the Rocky Mountain region?

GENERAL MORGAN. I can say that the curve of incidence of scarlet fever in the Army tends to parallel the curve of incidence of rheumatic fever, but more than that I can't say.

DR. VAN HORN. Are there other questions?

DELEGATE. I should like to ask these distinguished men just how frequently acute attacks of rheumatic fever followed these respiratory epidemics? For instance, if 500 men become ill in an epidemic of respiratory infection in a camp of 1,000, how many of them will be likely to develop acute rheumatic fever?

GENERAL MORGAN. Commander Coburn knows so much more about this, sir, than I do, that I shall ask him to answer that.

COMMANDER COBURN. It all depends on how well screening is done. Around 1925 to 1930 we at the Presbyterian Hospital accepted nurses for training, irrespective of their histories of rheumatic fever, and we obtained quite a high incidence among the nurses of rheumatic fever after tonsillitis; so subsequently there has been screening, and anybody who has a history of rheumatic fever has not been accepted. In the armed forces quite a large percentage of the potential rheumatics have been eliminated because they previously had heart disease or rheumatic fever.

I can't answer the question because conditions vary from place to place and from time to time, depending on how many rheumatic subjects there are in the group. My personal feeling is that the rheumatic subjects will in most instances develop rheumatic fever, but we are still unable to determine who is a rheumatic subject.

DR. JONES. In a group of servicemen, most of whom came from New England, studies of streptococcal infections were made this year; 5 percent of all the streptococcal infections were followed by rheumatic fever.

DR. DWAN. I don't know whether I got this right from your report, Commander Coburn, or not, but in following your cases with upper-respiratory-tract infections, did you feel that the incidence of rheumatic fever was higher in the group that had been treated with the sulfa compounds? Is that a hunch on your part?

COMMANDER COBURN. It is hard to know what would have happened to the patients if they had not received sulfanilamide—that is the difficulty. The thing that impressed me was that a number of individuals who had passed the age of 30, had lived in an environment in which rheumatic fever was prevalent, and had had many streptococcal infections in the past without developing rheumatic fever, developed their first attack when treated with sulfonamide. Having seen that repeat itself, I have been left with a clinical impression. I do not know that it is correct, but I thought I would pass it along.

DELEGATE. Commander Coburn, you think, then, that the sulfonamides are contraindicated in upper-respiratory-tract infections. It has been my experience that a great many teen-age children think they can do what they please when they are taking the drug. I wonder if the element of rest in bed doesn't have a good deal to do with it. I don't know what the relation is, but I think it may be wise to bear in mind the fact that people who come with minor streptococcal infections should be studied before being given sulfanilamide.

DR. VAN HORN. We have time for perhaps one more question. If there are none, we shall have a short recess.

[Short recess.]

CASE FINDING

DR. VAN HORN. You will note from the agenda that our next subject is case finding. After the very interesting session this morning regarding the incidence of rheumatic fever and rheumatic heart disease among the armed forces and the findings of Selective Service, we certainly shall want to know what some of the various State people are doing and what their experiences are in regard to the case finding of children with rheumatic infection. We always feel, too, that not making the diagnosis is often quite as important as making it. What has been the experience of the States with referrals by physicians, nurses, social agencies, and health officers? I believe that Dr. Hall of Oklahoma City has considered this problem and has worked very closely with some of the physicians and health officers in Oklahoma. I should like to have him tell us a little of his experience.

Referral of Patients

DR. HALL. When we first started, we took the records of the out-patient department of the Children's Hospital at Oklahoma City and followed up the cases that had been diagnosed as rheumatic fever. That was our nucleus. Since then, with our main clinic in the Crippled Children's Hospital, we get all the cases with a history of rheumatic fever that come to the general pediatric clinics. They are automatically referred to our clinic. In addition to that, we have referrals from the child-health clinics. We have 39 counties with health units, and of the total 241 patients whose records we have on file, 181 come from these counties; the other 38 counties furnish 60 patients.

In our two clinics out in the State, we have a little different situation. There are good health units there, and these units refer the cases. The physicians in charge of the health units, the nurses, the social workers, and everyone else concerned cooperate well. They go through the schools in their counties and refer to this

clinic anything that they suspect might be rheumatic fever; then we screen out the actual cases. If these patients need hospital care or even out-patient-department care, they are sent to Oklahoma City. That is, roughly, the way we find our cases. I can't tell you how many cases are referred from private physicians or other agencies in the State.

DR. VAN HORN. Thank you. Dr. Hall. Are there others who would like to talk about the experience of their particular States in dealing with this problem of case finding?

DR. EUGENE SMITH. I speak from the standpoint of the practicing physician and not of the health officer because my connection with the health department is more or less tenuous. In our community we cannot depend on referral from out-patient clinics because we don't have any, so we have to depend mostly on the practicing physician who has had these cases previously.

We first got in touch with the physicians in the community and explained to them what the program was all about, telling them that we were trying to do what public health should do—provide consultation service and supply things the doctor was unable to get. If a patient needed hospitalization, he could get it; if he needed diagnostic service or laboratory work, he could get it; if he needed nursing service, it was his for the asking. In that way, we have been able to convince physicians that we are not trying to take over their work but are trying to make it more effective. As a consequence, our doctors, almost without exception, have been very cooperative.

DR. VAN HORN. Thank you, Dr. Smith. Are there others who would like to talk about this particular problem from their own experience? The public-health nurses always offer one of the most frequent and most effective channels for bringing children under care; they are the ones who make the most frequent contacts with the family unit and are able to pick up some of the cases early. We should like to have Mrs. Sadler, of Virginia, comment a little bit about the work of the nurses.

MRS. SADLER. Our public-health nurses send the patient to a physician if one is available; if not, every suspicious case is sent to the nearest clinic.

DR. VAN HORN. Are there any others who would like to discuss case finding from the standpoint of nurses or welfare workers? Some of the crippled children's agencies are in departments of public welfare. I believe that is true in Minnesota. Dr. Dwan, what has been your experience with case finding and referrals by the welfare workers?

DR. DWAN. Minnesota is peculiar in its almost fanatical feeling that the private physician should refer the cases to this program. We have had no trouble in getting cases. We feel that our physicians are the backbone of the medical practice in Minnesota and that they are the ones who should have the privilege of referring these cases to us, and they do. The reason is that Minnesota is a fairly rural State. We can't keep the child for the rest of his life and we must have a private physician to send him back to; we have leaned over backwards, perhaps, in maintaining the good will of our family physicians so that when we feel we have done the peculiar service we are equipped to do, we can turn the patients back to the private physicians.

Examination of Siblings

DR. VAN HORN. Did you find many large families up there in Minnesota with a high incidence of rheumatic fever among the siblings?

DR. DWAN. That again was rather startling. We kept running into families with three or four children and a mother, two or three children and a father,

or three or four children and an aunt living in the same home, and the problem of running down these siblings and of deciding what to do about them, without getting tied down completely, required a great deal of serious thought. I hope we shall have some discussion on that matter.

DR. VAN HORN. I should like to hear of some of the experiences in other places. Dr. Walsh, I believe you are following the practice here in Washington of examining siblings.

DR. WALSH. Yes; we follow that routine. I think the procedure of attempting to examine the sisters and brothers of our patients in our clinics at Children's Hospital and our Crippled Children's Clinic at Gallinger is worth while. However, the actual carrying out of that program is complex because of the difficulty of getting the sisters and brothers of our patients to come in. We have been successful to date—and our program here is now about 2 years old—in examining some 70 or 75 sisters and brothers. We have found only 4, as I recall, who probably had rheumatic fever, 4 about whom we did not already know. It is a small number; yet we have only 104 patients registered in our clinic at Gallinger, and at Children's Hospital we have only 140, so of the number of siblings we have examined this is a fair proportion. We are continuing to try earnestly to locate cases and probably will have greater success in the future.

DR. VAN HORN. Dr. Jones, I noticed a frown on your face.

DR. JONES. I wondered if Dr. Walsh meant that he always had so few instances of cases of rheumatic fever among members of families.

DR. WALSH. Oh, no; because we have had the usual experience that everyone has had who has worked in this field; that is, we have families in which all the children have had rheumatic fever; we have eight families in which more than one child has had it; we have one family in which all three girls are rheumatic. We have the usual experiences in that regard. I am speaking only of those we did not already know.

DR. ROGERS. This seems to be a pretty worth-while case-finding procedure; about 5 percent of the children you examined were found to have had rheumatic fever, isn't that so?

DR. WALSH. Yes.

DR. ROGERS. Recently we have done a study of almost 400 school children in one area where there has been high incidence of scarlet fever over a period of 2 years. We located eight-tenths of 1 percent by the very laborious procedure of following up the school children. Your reward was high for the effort put into it.

DR. VAN HORN. This method is somewhat parallel to the methods used in tuberculosis case finding—following up the family unit and examining all contacts. Are there others who would like to tell of their experiences in the examination of siblings?

DR. GALVIN. When our patients are referred to the clinic, whether examined by clinic physicians or public-health officers, we get in all the siblings, too, bring them in one, two, and three at a time. We have some very large families, especially among the Negro population. We just assume the brothers and sisters have been referred, too. We write a letter and thank the physician for it as if it were his original idea.

DR. VAN HORN. There are a lot of ways of doing things, we have found out. I think we sometimes can offer such extreme courtesy to local physicians that the welfare of the patient suffers, and we have always felt that there should be others besides physicians who should be permitted to refer children who are suspected cases to the services. We can see very little reason why a local health officer should not be permitted to refer children from his area to the clinic, or

even local welfare agencies. Children in the area who are suspected of having certain diseases certainly should be provided with the care they need if those services are available in that area. So I hope we won't be too rigid about trying to work solely with the family physician.

That brings us to the problem of examination of school children. Dr. Rogers has already raised a very interesting point as to whether or not the examination of school children as a case-finding procedure yields sufficient results to warrant the amount of time it takes. Dr. Walsh, I know, has had some experience in dealing with that very problem here in Washington. Will you tell us a little about it?

Examination of School Children

DR. WALSH. Our program here covers a small area as compared to such areas as are covered by the Oklahoma program. Therefore, it is possible to tie it up very closely with the school medical-inspection program. Dr. Murphy, who is the chief school medical inspector, is a full-time officer in the health department. The examiners, however, are, for the most part, working part time. We have spoken to the school medical inspectors and have attempted to instill in them our interest and ideas, as well as our conviction of the value of referring patients. They examine children here in the school system, I believe, once in the seventh grade and once in high school. We ask that they refer to us all patients whom they suspect to have heart disease or about whom they would like an opinion.

This system, of course, depends upon the interest and knowledge of the school medical inspectors. We see only those children whom he refers and we see a great many from one or two doctors, and none from several. There doesn't seem to be any way of correcting that situation, but we have examined in the last year and a half some 200 school children, sometimes in groups of 15 to 18. We have found a surprisingly high percentage of heart disease in these 200 children, about 15 percent. About half of those were children with known heart disease; the others were considered as unknown and new cases; few had congenital heart disease, most were rheumatic. A very important part of this work of referral by the school medical inspectors to a cardiologist is to put on the right track those children who don't have heart disease. We see many who are limited in activity on the advice of family physicians—children who don't take gym, are forbidden to climb stairs, and similar things. Most of those that we have seen have had no heart disease whatsoever. Of course, they have been restored to a full program, and that is very important.

There is another aspect to this problem. I am in private practice in addition to doing this work as a part of the health program, so I have something of the viewpoint of both private physician and public-health officer. In this city we have to tread softly because of some prejudice against public-health work, prejudice that we shall have to wear away slowly. I think it is wearing away, but I may cite one example of it that occurred in my experience. Perhaps some of you have had similar experiences. I saw a child, a young girl in one of the high schools here, who was restricted markedly in all her activities on the advice of her family physician. This girl was referred to me by the school medical inspector, who had found no evidence of heart disease. The child had no heart disease. But the family physician was up in arms promptly, saying that, in his opinion, this child did have heart disease, and who were we to say that she did not? The family decided they would seek a third opinion; this was done; the child proved to have no heart disease and was restored to a full program. The family doctor was very much disturbed, to put it mildly. I don't think he is now, but certainly he was very combative at first to any change in his own diagnosis. This is

a problem I am sure anyone in a position similar to mine has to face. I don't know whether there is any easy solution for it; we do try to solve it. We have now changed the procedure somewhat, as we think it would be better if the chief school medical inspector rather than the cardiologist contacted the local physician. This procedure seems more official perhaps, but we still have to tread softly.

DR. FRENCH. In Anne Arundel County in Maryland the health department is the school medical authority and has the responsibility for the examination of school children. All children found with heart murmurs or cardiovascular conditions of any sort are referred to the cardiac clinic conducted by the health department. When a school child is found to have one of these conditions, he or she is reported to the nurse, who gets in touch with the family. The family then consults the family physician, through whom the child is referred to the cardiac clinic. We get a surprisingly large number of referrals.

Some, of course, do not come. The doctors report they already know their condition and no further diagnosis is necessary. We also have in our part of the country some families who have no regular physicians. In such cases we try to bring the children into the cardiac clinic ourselves, and if medical care is needed afterward, they are referred to private physicians or handled in any way that seems best under the circumstances. This system has been approved by the medical society of the county.

It is hard to say how many are referred to us by physicians because the machinery is a little complicated and it is sometimes difficult to tell, but I suppose that at least half or well over half are directed to the clinic by the family physicians. We found when we started the program that nobody knew very much about rheumatic fever. One doctor who had been practicing since World War I said he had never seen a case. He had referred a case to us with a diagnosis of poliomyelitis. He has diagnosed several rheumatic-fever cases since then. We found a great many of the doctors were not looking for this disease, were not expecting it apparently, and did not diagnose it. I think the incidence of diagnosis of rheumatic fever on the part of private physicians is now increasing. Many of them have attended the clinic and understand the disease more fully.

DR. VAN HORN. When I was in St. Paul a few weeks ago, I talked to Dr. Dwan. He told me how one of the county medical societies got busy and examined all the school children in one of the counties there. I wonder if you would tell us a little about it.

DR. DWAN. That was rather an interesting type of school screening. It has a bearing on the question as to whether children should be referred by the family physician or not. In one little community just out of St. Paul three of the local doctors who had been thinking about the problem of rheumatic fever went through a school of several hundred youngsters. The school nurse took the history and the doctor made the physical examination. Together they screened the cases out on a basis of suggested history, history of unexplained illness such as a low-grade fever, and the presence of a murmur. That process cut the cases down to about 40. Two of us then went over the group and found about 6 or 8 that we thought should have further diagnostic tests in our clinic. Out of those 8, 2 were actually rheumatic and 1 had congenital heart disease.

DR. VAN HORN. Dr. Huse reminds me that Dr. Spekter also has had some interesting experiences in Connecticut in dealing with the problem of school examinations.

DR. SPEKTER. In Connecticut, school examinations have been of definite value for case finding of heart disease. In a city of about 60,000, a cardiac organization has been developed in very close relationship with the school system. Every

child reported by a school physician as having a heart murmur is screened at the cardiac clinic. Many of the children who have passed through this clinic have turned out to have no heart disease. I think, as Dr. Walsh has said, that it is very important to screen out children who have been labeled as rheumatics and turn out not to be. I am also concerned with those children who are sent to special classes and generally stay there for years on end. I think it is the function of either the school physician or the official agency to review often, perhaps every semester, the children in these special classes, whether they are rheumatic-heart cases or orthopedic cases, or any other type of handicapped children. A system of this sort is being used in New York City. It would be of value in Connecticut.

I should like to go back to the question of examination of siblings of rheumatic children. I don't know how to go about this task. It is rather difficult to get a whole family into a clinic when they have to travel long distances. Each family survey could be accomplished only over a period of several months. We have to rely chiefly on the family physician to tell us whether any other members of the family are rheumatic.

We should try in some way to bring rheumatic-fever services directly to the school, particularly when there is a school population of sufficient size to warrant the specialist's coming to the school for the examination and follow-up of those children who have rheumatic heart disease.

Dr. Rogers. I should like to take a moment to emphasize the point you raised with regard to the school medical inspector. The specialized school medical inspection that we have been discussing here, which we all want to see expand, of course, will pick up and correct the overdiagnosis, but it will not take care of the underdiagnosis on the part of school physicians. I wish Dr. Rutstein, who until recently directed our service in New York State, were here to report on a study he and Miss Parker conducted in three rural counties, where they studied the medical inspection by school physicians of over 21,000 children. These counties had large central schools, generally with around 500 pupils. According to the reports of the school medical inspection, the incidence of heart disease varied from zero to 13 percent in comparable schools in essentially the same part of the State. I know of no better evidence of the need for extending our efforts for training the school physician or the individual doing the initial screening.

We had another experience in a small community up in the northwestern part of the State around Lake Ontario. About 400 school children were examined by an expert examiner. That particular examination was brought about by the reporting of an epidemic of rheumatic fever by one of the local physicians. He kept 9 children in bed from several months to over a year. Our preliminary examination indicated that these children weren't rheumatic at all, at least didn't have rheumatic heart disease. There was, however, a very difficult situation to cope with, such as the one Dr. Walsh mentioned, in the relationship between the outside consultant and the local physician, especially since the public was very much excited about the epidemic and very much disturbed about its effect on summer business. The outside consultant did a beautiful job, with the result that all 9 of those children are now completely restored to normal living.

Dr. Van Horn. This brings us to the next point—compulsory reporting of rheumatic fever by physicians. Rheumatic fever is reportable in a number of areas, such as Chicago, here in the District, and in the States of Michigan and California.[1] There are several others, too, I believe, in which the reporting of

[1] Rheumatic fever is a reportable disease in the following States: Arizona, California, District of Columbia, Illinois, Iowa, Maryland, Michigan, Rhode Island, Utah, Wyoming. William Fowler: The reportable diseases, Public Health Reports 59: 317 (March 10) 1944.

rheumatic fever is compulsory. I wonder if you could tell us, Dr. Mills, about your experience with compulsory reporting in California?

Compulsory Reporting of Rheumatic Fever

DR. MILLS. We have had reporting of rheumatic fever in California for almost 2 years. I have some figures here that I shall give you very briefly. For the last 18 months exactly 400 cases were reported to us, an average of 22 per month. We had a feeling from the start that we were getting a great many reports of old cases of heart disease, but recently we think we have been getting more true reports of rheumatic fever. In California some 50 diseases are reportable and for that reason it has been difficult to emphasize any one disease. We feel certain, for that and other reasons, notably the war and the fact that physicians are so busy, that reporting is by no means complete.

Of the cases reported in the age group from 5 to 29, the largest number, or 27 percent, were from 10 to 14, and 23 percent were from 5 to 9.

DR. VAN HORN. There is time for other comments on the reporting of rheumatic fever.

DR. GIBSON. To speak for Illinois, rheumatic fever is reportable in Chicago. Reports from the clinics are usually fairly complete, but many physicians fail to report their private cases.

DR. FRENCH. In Maryland the State board of health made rheumatic fever reportable at its meeting on September 23 just past.

DELEGATE. I should like to ask with reference to these 400 cases from California whether the requirement of reporting has resulted in any substantial number of children receiving special care that they might not otherwise have had.

DR. MILLS. In California our rheumatic-fever program covers only 2 counties of the State, and of course these 400 cases were State-wide, so really a very small proportion of the number that have been reported have been included in our program. I think it is safe to say that in the 2 counties where we are operating, most of the cases reported have been from our own clinics; that probably is an indication, you might say, of lack of reporting over the entire State.

DR. WALSH. Rheumatic fever has been a reportable disease here in the District of Columbia for some 3 or 4 years, but few cases, I think, are reported besides those we personally know of and see in the clinics. We haven't emphasized reporting here because our statistics would be very questionable and also because we have thought that the emphasis belonged on the education of the physician, school medical inspectors, and public-health nurses. When we feel that these other aspects have gone along well for a while, we shall push the registration and reporting and then probably shall be prepared to do something about it.

DR. VAN HORN. Dr. Jackson, I believe rheumatic fever is reportable in your State. Is reporting State-wide or localized in Iowa?

DR. JACKSON. Rheumatic fever is a reportable disease in Iowa. In all our field clinics we are encouraging the doctors to report all cases. We have had a satisfactory response, hence are able to assist in the care of these cases as they are reported.

SERVICES OF DIAGNOSTIC CLINICS

DR. VAN HORN. It seems that this problem is linked with the problem of educating the practicing physician. That brings us to our next subject. We

are going to touch upon professional education at various points throughout these discussions. Our first encounter may as well be right here. To what extent are diagnostic clinics used as an educational experience for local medical, nursing, and social-work personnel? It seems to me this is one of the methods that can be used in implementing the educational program and making the doctors more keenly aware of the problems. Dr. Jackson, I think you have had some very interesting experiences in Iowa in using your diagnostic clinics as an educational experience for physicians. Can you tell us a little about them?

Educational Experience for Medical, Nursing, and Social-Work Personnel

DR. JACKSON. In the State of Iowa the crippled children's program is under the Iowa State Board of Education; the university functions as the central point of our service and consequently we have the opportunity of carrying on undergraduate as well as postgraduate education on the subject of rheumatic fever. As has already been brought out, particularly by Dr. Dwan, in a rural area the need for close relationship with the practicing family physician cannot be overemphasized.

We have relied primarily on the local physician to refer patients and have found it very satisfactory. Our local field clinics are accepted by the county medical societies—in fact, the county medical society requests that the clinic be held. We have an attendance of about 80 percent of the general practicing physicians at the time we are examining the children, which tremendously simplifies the problem that Dr. Walsh brought out of helping to rectify some of the faulty diagnoses. When the family physician, the patient, and the consultant are there, the situation usually can be cleared up diplomatically. The local county medical society usually has a meeting at the time we are having our clinic, so we have the opportunity of discussing the problems and carrying on a general educational program.

Our cardiac clinics are not separated in any way from our general crippled children's clinic. Cardiac, diabetic, and crippled children come to the same clinic, so we do not confine our attention to one disease group. If a doctor has 8 or 10 children who are being seen at the clinic, they are scheduled for examination at about the same time. This is advantageous from the standpoint of the general practitioner, as it makes him a part of the clinic and conserves his time. No doubt, this to a great extent accounts for the good turn-out of general practitioners we have at our clinics.

The other advantage of the program is that it brings in the other community agencies—nursing, social-service, and others—which now work together more effectively than they have frequently done in the past. We feel that the educational aspect of our program, postgraduate as well as undergraduate, is its most important phase.

DR. VAN HORN. Thank you, Dr. Jackson. Are there others who have been using their diagnostic clinics in a similar manner? You can see the very close cooperation with the local physician that has been worked out in Iowa. Have similar procedures been used elsewhere?

MISS WOHLGEMUTH. In our program in Anne Arundel County, Md., we started by first having an institute to which we invited all the physicians, the nurses, and the staffs of the welfare agencies. We were highly honored by having such people as Dr. Betty Huse, Dr. Taussig, and Dr. Hecht participate in the institute. The institue helped by giving us considerable publicity and arousing interest. After the institute the clinics began to function. We have

now two clinics to which our consultants come. Various members of our nursing staff take turns in assisting. We invite as many of the physicians as possible. Recently we have had field clinics, which we have held in sections of the county other than Annapolis. More recently we have been invited to speak to various groups. There is a graduate nurses' club or association in the county to which practically all graduate nurses belong, including those attached to the Annapolis hospital; we have been invited to speak to this group. They haven't been actually invited into the clinics, but that is our next step.

DR. VAN HORN. Are there others who would like to comment about how they are using these services as an educational medium for the local health and welfare personnel? If not, we have two other questions on our agenda: What responsibility does the agency take for children ineligible for care and treatment services? How does the agency see to it that those children are brought under care or are referred to the proper source for services that are needed? Miss Tartakoff, could you comment on these questions?

Services to Children Ineligible for Care

MISS TARTAKOFF. I think a great many of the States represented here have specific experience in that regard. I have noticed that because the rheumatic-fever program is often a medical service that has suddenly become available in an otherwise medically undeveloped community, parents have a tendency to bring their ailing children to the clinic whether they have rheumatic fever or not. I think in most of the rheumatic-fever clinics the staffs have taken it as one of their major responsibilities to direct these sick children to other resources in the community, so that the children may have the exact type of care they need. I think Mrs. Ziegler could be called upon to make a few remarks.

MRS. ZIEGLER. We refer the children to other agencies, too, if they are ineligible for medical care under our program because there is too much income in the family.

DR. VAN HORN. This point brings into our discussion one of the services we have felt to be a very essential part of our rheumatic-fever program—the services of the medical-social worker. Certain social problems beset the child who has a chronic condition, problems that can be most satisfactorily dealt with by individuals who through their training and experience are competent to deal with them. In all the programs that have been approved to date, such services are provided and our own advisory committee has reiterated on numerous occasions that they are highly essential in meeting the problems of the rheumatic child, quite as essential as the other services that we unquestioningly accept—the medical and nursing care, for example. Are there other comments or questions?

DR. HUSE. I should like to ask whether the medical-social workers in the States are encountering to any great extent the problem of the child who is told he has no heart disease when he and his parents thought he had it?

DR. VAN HORN. Would anyone like to comment on that question?

DR. JACKSON. I think the question is extremely important and I do have a few figures bearing on it. In the diagnostic clinics that we held, 25 percent of the children whom we have seen for heart disease have been found to have only functional heart murmurs or no evidence of heart disease. We always follow them through the combined efforts of the medical, medical-social, and nursing staff, in cooperation with the family physician. I think this is another good instance of why the family doctor is needed. If he is not a part of the

picture, the patient is more likely to become confused and eventually to develop a cardiac neurosis.

Dr. Eugene Smith. The other extreme is the group of cases that are not eligible, those who have an irremediable type of heart disease. I understand we cannot take care of them, but I think we can offer the doctor a great deal of help through consultation service and a little nursing supervision. Many families have such children on their hands and do not know what to do with them; hospitalization is not available to them, but by giving them a little consultation service, by having our nurses and medical-social workers go in once in a while to encourage them and help them, I think we will have done much that has really helped these people and the children and their parents.

Dr. Galvin. We have been concerned with this problem down in Virginia. We give each child in the State who can get to the clinic complete diagnostic and follow-up services. We also offer nursing supervision when it is available, and social service through social workers.

Dr. Van Horn. Miss Cohen?

Miss Cohen. I think parents and families are often terribly perplexed when they are told a child believed to have rheumatic fever is not ill. I have found in some places it is extremely important for the clinic to take plenty of time to explain to the family why it has no service for the child who is not ill or who for some other reason cannot be accepted. I think the time taken in giving a careful explanation is more than worth it.

Dr. Van Horn. Miss Carl?

Miss Carl. I should like to comment a little more on what Miss Cohen said. We are doing something in Oklahoma that has proved very valuable in helping the parents to understand that a child who previously was considered a cardiac invalid actually does not have heart trouble. We have a case conference after each clinic and that has been most helpful, particularly in our itinerant clinics in the State. The department of public welfare is represented, the local physician, the county health unit, and the county superintendent of schools, and we discuss the problem of the individual child and how and by whom his needs can be met.

Dr. Van Horn. Are there any other comments? If not, we shall adjourn until 2 o'clock this afternoon.

[The conference was adjourned at 12:45 o'clock to reconvene at 2.]

Tuesday, October 5, 1943—Afternoon Session

INSTITUTIONAL CARE OF CHILDREN WITH ACTIVE RHEUMATIC INFECTION

Criteria for Determining Whether Active Infection Is Present

Dr. Jackson. Our problem this afternoon is to discuss institutional care of children with active rheumatic infection. As I indicated this morning, in our State we have included children with heart disease in the crippled children's program—we do not have a rheumatic-fever program as such. When we started our crippled children's program we wanted very much to include rheumatic fever, diabetes, and certain other conditions as part of the program. Now the Bureau is helping you people from other States to develop rheumatic-fever programs.

I am a pediatrist and not a cardiologist. I should like to make that clear at the start, so that our thinking will be directed toward the child rather than his heart. Our first subject is: What are the criteria for determining whether or not rheumatic infection is present? In other words, when does the disease pass from the active to the inactive phase? From the standpoint of the nurse, the social worker, and the mother, the question resolves itself into: When can Johnny get up? When can Johnny come home? From the medical standpoint, I am sure all of us will agree that it is not a simple matter to decide when the infection has entirely subsided. That is the problem that confronted us at the beginning of our program and I am sure that it was one of the most frequent questions that came to Dr. Huse.

I asked, when our program started, for an opportunity to visit a number of Eastern clinics, especially to obtain a better understanding of how this particular decision can be made. I went from one clinic to another. In one place the sedimentation rate was definitely the criterion; in the next clinics, they had no faith in sedimentation rates and placed more emphasis on the vital capacity or the Weltman reaction. The next person I met felt that it was primarily a clinical decision, that you couldn't rely too much upon the laboratory findings. I soon realized that there was no simple answer to this problem, and we still have no simple answer. I think many of us err in relying too much upon one type of laboratory procedure or one type of clinical finding. If we do that, we are certainly going to get into difficulties.

I should like to show you a few slides which will give you a graphic picture of the course of the disease. This is the type of graph we keep for each patient in our sanatorium.

The upper part of the graph shows the sleeping pulse rate and the temperature. Notice that in the earlier phase, there is an elevation of the pulse rate and an elevation of the temperature, and then gradually the temperature and pulse rate decrease to normal limits.

The second area of the graph shows the white blood count and the micro (Kato) and the macro (Westergren) sedimentation rates. Notice that the white blood count is normal much earlier than the sedimentation rates.

The lower part of the graph shows the hemoglobin, vital capacity, and weight of the child. Notice how they progressively increase.

If one has a graphic picture such as this, I think it is much easier to decide when the patient's infection is inactive. Dr. Leo Taran in New York gave me the idea of using this type of record.

Next slide. This shows the close correlation between the vital capacity, sedimentation rate, and the weight gained in two individual patients and the very close correlation between the two methods of determining sedimentation rates—the macro Westergren and the micro Kato methods.

In the types of sedimentation-rate determination in which a correction is made for anemia, it has always seemed to me it would be much better to correct the child's anemia rather than to make allowance for it in the sedimentation rate. There are reasons for making corrections in evaluating the early rate from a diagnostic standpoint, but later, in relation to inactivity, if the patient still has anemia, he is not well.

The other point that I should like to make in relation to sedimentation rate is to use the range of normal values rather than the mean value. In estimating sedimentation rates, regardless of the method used, it is extremely easy to make technical errors; when one has a value that does not fit in with the clinical picture, I would advise rechecking the laboratory procedure. We found in our study that the most common errors occurred during the change of intern staff or change

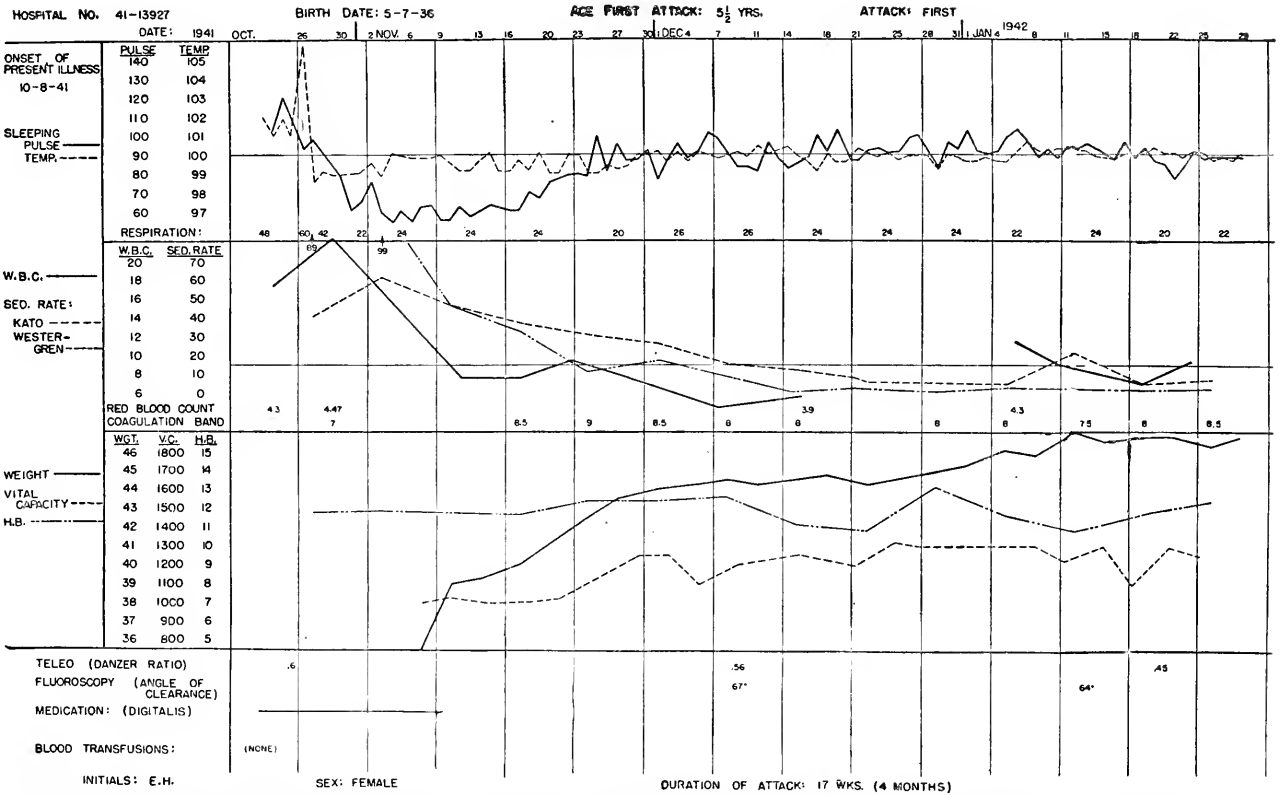

Chart I shows the changes in the sedimentation rate during the treatment of a patient with rheumatic fever and demonstrates the close correlation ordinarily observed between values obtained by the Westergren macro method and the Kato micro method. The relationship of the sedimentation rates to other clinical and laboratory values is also shown.

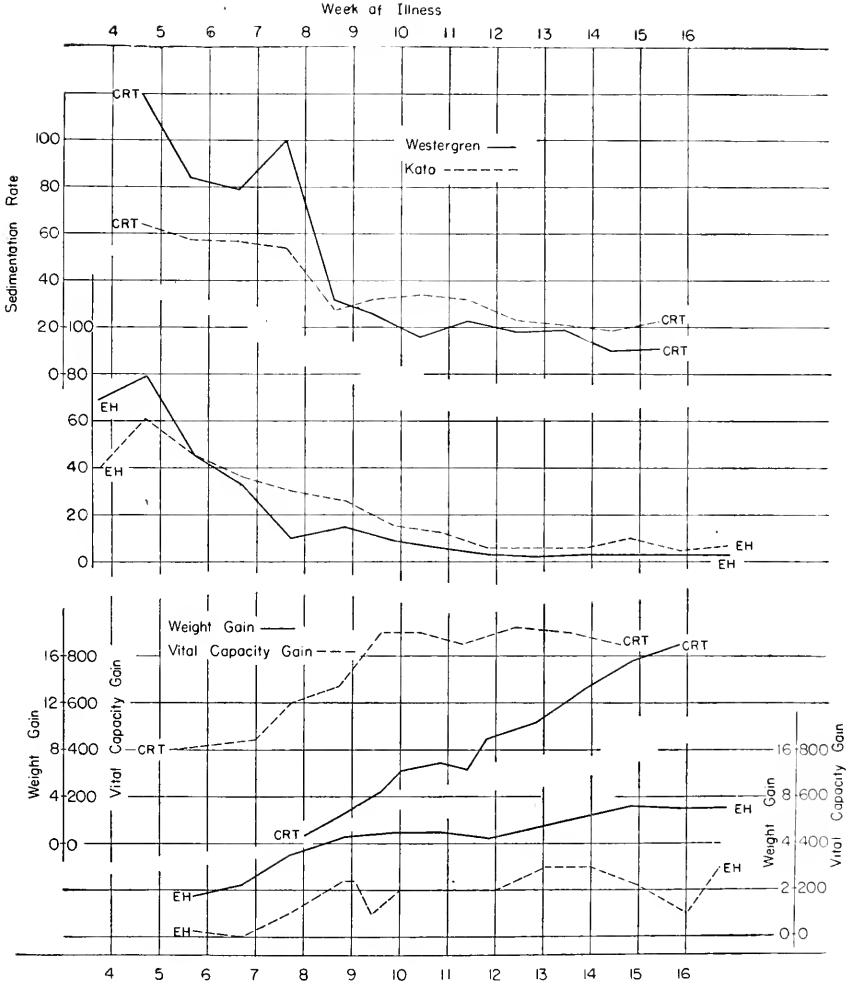

Chart II shows the changes in the sedimentation rate during the treatment of two children and demonstrates the close relationship ordinarily observed between values obtained by the Westergren macro method and the Kato micro method. The chart also shows the progress of the patients as to gain in weight and gain in vital capacity which follow improvement, or decrease, in the sedimentation rates.

in vacation relief in the laboratory, and we usually could account for an individual sedimentation value that was not in accordance with the general picture.

Know the limitations and normal range of values for the method you are using and be certain that you and the technician are aware of technical errors of that method. It would be very helpful if we did not have as many methods as we already have developed; I think any of them are probably all right. We have checked only two and, as you can see, those two showed a high degree of correlation. We wanted to make sure that we had a method that was technically simple so that we could depend on the local technician to carry it out; we found the old Westergren method to be more reliable for the inexperienced technician. The micro method is more convenient from the standpoint of hospital or sanatorial use, and one also gets a hematocrit reading along with it. I am not boosting either of these particular methods; other methods, I know, are just as satisfactory.

The point I should like to make is that I feel one should not use the sedimentation rate only, nor the vital capacity only, but should try to get a complete picture of all the factors in relation to one another. When a child's sleeping pulse has definitely been normal for a month or two (usually it will be normal long before the sedimentation rate), when the vital capacity is beginning to level off, when there is no change in cardiac size, when the child has reestablished his expected weight, and when the hemoglobin is within normal limits—then your patient has very likely passed the active stage of infection.

Working in a rural State, as we do, we have the problem that in many of our local areas we do not have the laboratory or hospital facilities needed to make such detailed studies as are demonstrated here. The thing that was most surprising to me in following these patients and their charts was the very close correlation between the laboratory findings and their nutritional state. As soon as the laboratory findings began to show the infection was subsiding, the child's appetite uniformly improved. I have stressed to the practicing physicians in the State the importance of evaluating the nutritional state of the child, and we have prepared charts for this purpose, which will be published soon. If I had to rely on one procedure, which luckily we never have to do, I think I should prefer to go on the physical examination in preference to any single or combined laboratory procedure. I should want accurate weights on the child who has been under good dietary supervision. These are available in practically any community.

Now as to determining cardiac size as a criterion of inactivity, we have studied Dr. Wilson's [1] angle-of-clearance method. In that, as in everything else, we found there was a wide individual variability. We modified the technique, so our figures are not entirely comparable to Dr. Wilson's. A group of 102 normal children was examined to determine the range of normal values.[2] Repeated examinations were made to establish the reliability of the method. We found that the left cardiac border cleared the spinal column at two points: First, when the cardiac border was separated from the projection of the transverse processes of the spinal column; and second, when the cardiac border was separated from the anterior border of the bodies of the vertebrae. The range for the first angle of clearance is from 38° to 67° and for the second angle, from 46° to 86°. The mean value for the first angle of clearance is 51.8° and for the second angle of clearance, 63.2°. The standard deviations are 5.8°

[1] May G. Wilson, M. D.: *Rheumatic Fever,* The Commonwealth Fund, New York, 1940.
[2] A. J. Dis. Child. 68: 157 (September) 1944.

and 7.4° respectively. At the present time, we are studying the clinical application of the modified technique.

DR. JONES. I feel very strongly that the sedimentation rate as an evidence of active rheumatic fever is exceedingly important and that of all the laboratory tests it is probably the best. However, I agree that it is not specific but is just one of factors that must be considered in judging the status of the patient's generalized disease; all the other factors are very important, too. Certainly we have felt in the last few years that the anemia that almost always develops in these rheumatics is probably just as good a criterion of active disease as the sedimentation rate. So far as we have been aware, no therapy has ever appreciably altered the anemia until the process of rheumatic fever subsides. I should like to point also to the fact that there is one snare in the sedimentation-rate pattern in rheumatics—in about half the cases that have right-side failure, which I think is often overlooked, the sedimentation rate is normal. In a child in whom one suspects active rheumatic fever a normal sedimentation rate should make one anxious about the size of the liver and about the possibility of right-sided heart failure.

As for various methods of determining sedimentation rate, I think there is no criticism. I personally feel that sedimentation-rate methods, in which the rate per minute at the period of most rapid fall is estimated, are the most accurate. There are two or three of these but they are time-consuming and may not be practical. However, I think it is too bad that, in a test as widely used as is the sedimentation rate, there is no unanimity of opinion about what method is to be used. One sees a tremendous number of different ways of recording sedimentation-rate values in every hospital one goes to. It is very difficult to tell what is meant in terms of the usual method of recording.

I think that both the methods used by Dr. Jackson are quite good. Apparently the micro method did stand up well, and I am surprised, because most people have taken some critical shots at it.

The sedimentation rate is a valuable addendum to other findings of active infection. I hope it is being used very frequently in all the programs, and also that the other manifestations of rheumatic fever are not overlooked.

DR. JACKSON. Dr. Taussig?

DR. TAUSSIG. I heartily agree with what has been said, both by Dr. Jackson and Dr. Jones. I, too, feel that although the sedimentation rate is not the only criterion by which to judge activity, it is one of the most sensitive indices. A few points have not yet been brought out. One is that a first attack of rheumatic fever frequently occurs with a normal, or close to normal, sedimentation rate. Also, after a first attack the sedimentation rate usually comes back more promptly than it does after recurrent attacks. Nevertheless, it remains elevated so long on many occasions that one wonders whether something else is causing the elevation. In such cases we attempt to rule out such conditions as chronic sinusitis, chronic kidney disease, and tuberculosis. Tonsils that are merely large do not often account for a persistent elevation of the sedimentation rate. I have not often found that tonsillectomy alters the rate. Dental caries seldom accounts for an elevation of the sedimentation rate but alveolar abscess may do so. Usually after nonrheumatic illnesses the sedimentation rate comes back to normal remarkably promptly; I have seen it come back to normal within 3 weeks in a rheumatic patient who had pneumonia.

Our experience with weight gain has been with children in convalescent homes. At the convalescent home we can often get them to start to gain in weight before the process is over, and long before the sedimentation rate, or even the fever, comes down. At their own homes it is much more difficult to get them to gain

weight until they are better. I would feel very differently as to the significance of gain in weight depending on whether the patients were gaining weight at home or in a convalescent home. In regard to size of heart, it is the change in the size of the heart that is significant.

The other point that I should like to emphasize is that after a long period in which the sedimentation rate has been elevated, it often fluctuates widely as it comes back to normal, and I believe that one should have two normal sedimentation rates, at least 2 weeks apart—and in long illnesses a month apart—before one can be confident that the infection is over. Before this precaution was adopted, we had this experience repeatedly: The patient had one normal sedimentation rate; the next time he came back with an elevated sedimentation rate, which was disregarded; a month later the patient was in trouble from some other more serious manifestation of rheumatic fever. We still feel that the sedimentation rate is very useful.

DR. JACKSON. Thank you very much. Dr. Gibson?

DR. GIBSON. I, too, am among the group who believes the sedimentation rate is important. However, I don't think we can accept it as being by any means the only criterion, or in some cases the most important criterion, as to the cessation of active rheumatic infection. One thing that has not been discussed as much as I should like to hear it discussed is that borderline zone in which maybe the rate is normal and maybe it isn't. What constitutes a normal sedimentation rate by any given method? My chief familiarity, outside of our hospital, with the sedimentation rate is what was done by Dr. Herzog in Chicago at a summer camp for cardiacs. For a number of years he took some several thousand sedimentation rates on the groups of children who were there year after year. In some, he found a rate consistently above the accepted normal; yet they had normal pulse, normal temperature, normal exercise powers. In other words we could not consider those children to be actively rheumatic. I don't believe we make sufficient allowance for what might be termed the normal variability in the sedimentation rate in children in whom we can demonstrate no signs of disease.

I know this much, that, as Dr. Jackson has suggested, we are apt to get some very bizarre sedimentation rates when they are first being taken by new members of our resident staff. I have always been rather amazed at the infallibility which most of us attribute to any laboratory procedure. We can be wrong; we can be very wrong; but the laboratory report can't be wrong, even if it is made by the newest member of the laboratory staff—I think that is a frame of mind we should not get into.

Then there is another thing I should like to stress in connection with the cessation of rheumatic activity in children. I don't think it has been particularly emphasized. Of course, we expect anemia is going to be better; we expect the child is going to have a good appetite; he is going to be gaining weight; he has a normal temperature; he has a normal white count; but there is something more than all that, and that is the appearance of the child. There is a relaxation of the child's face; the child's appearance is different from what it was during the period of active infection.

My criteria for letting a child up, or letting him begin to have activity, are something like these: I want him to have normal pulse—that is, normal as far as we know, but we don't know too much about that; normal temperature; no anemia or no appreciable anemia; gain in weight; and normal sedimentation rate; and that look on his face that comes when he is getting well. Then last, though not least, and I am not saying this to be facetious, I invariably turn to the head nurse and ask her if she thinks the child is ready to get up. That, if you have the proper sort of head nurse, should not be neglected. She sees the child

day in and day out. She may say, "Yesterday he had a little pain in his shoulder; it lasted only a few minutes." Or she may point out that he hasn't eaten quite as well for the last 2 or 3 days as he did before. There is nothing on his chart to tell you that the child isn't doing as well as he had been, but the nurse usually knows.

DR. JACKSON. Thank you very much, Dr. Gibson. Dr. Galvin?

DR. GALVIN. I am frank to say I am confused on many points about the sedimentation rate, although we started 3 years ago doing Cutler and Wentrobe and found exactly what Dr. Jackson found. We know, of course, that the sedimentation rate sometimes is delayed or accelerated; the patient may be sick several weeks or months before the sedimentation rate becomes much accelerated. We have had the experience of putting the child in the convalescent home, feeling assured he has active rheumatic fever, and finding 2 or 3 months later, when the child is much improved, that the sedimentation rate suddenly becomes markedly accelerated and stays that way for a good many months before returning to normal. We have had several instances in which the sedimentation rate remained practically normal throughout the course of the illness, but when we finally let these children up as infection-free, the sedimentation rate accelerated immediately and remained accelerated, one for a year. This has puzzled us very much.

We also are beginning to realize that the range for the individual child is very broad. We agree with Dr. Taussig that in the convalescent homes many children gain weight although it is many months before they seem to be progressing in other ways.

DR. JACKSON. Dr. Dwan, I understand you have had experience with the use of sulfanilamide therapy on patients whose infection is inactive, with the possible exception of slight sedimentation-rate elevation. What effect has such use of sulfa therapy had on the disease?

DR. DWAN. I think that the sedimentation rate has been a great help to us. It has also added to our headaches when we have tried to evaluate in a given case whether the disease was still active or not. There seems to be something perverse in a child's being clinically on the road to recovery with the sedimentation rate lagging so far behind. We mus realize when we are dealing with rheumatic fever that we are dealing with an illness. Fundamentally, therefore, we have to evaluate the difference between a sick child and a well child. I think it is easier to tell when the girls are feeling well than the boys because they start watching their diets, whereas the boys don't seem to care. When the girls are getting well, they want to put their hair up in curlers and cut down on desserts.

In its perversity, however, the sedimentation rate lags behind. We then have to see if there is either abscess or sinusitis or some other infection that was present when the child was put to bed with rheumatic fever. Every once in a while we find something like that.

In reference to my use of sulfanilamide during this stage of acute rheumatic fever—once the clinical manifestations of rheumatic fever have subsided, we can sometimes use our sulfanilamides as prophylactic, preoperative agents before we work on a sinus or operate on a mastoid. My experience is limited in this line, but so far I have had no trouble. If there is an obvious infection, perhaps it is safe to use sulfanilamides. I would recommend—clean up nose and throat infections surgically, continue prophylaxis, and stop.

DR. JACKSON. Thank you, doctor. We are now ready for general discussion.

DR. WALSH. I am of the school that believes the sedimentation rate, if not the most important, is at least pretty nearly the most important test we have for determining whether or not an individual has rheumatic fever. We have

used the Ernstene Rourke sedimentation rate. I think we cannot stress too much the importance of knowing who determines the sedimentation rate and what he knows about it. Since the average pathologist knows very little about sedimentation rates, many technical errors enter the picture.

Where the Child With Rheumatic Fever Should Be Cared for

DR. JACKSON. If there are no further comments, let us continue with the next question: Where should the rheumatic child be cared for in relation to the stage of his disease and the facilities available?

When our program began, I visited a number of institutions for rheumatic children in various parts of the country. Most of the places I visited were called sanatoria and were keeping children during the active stage and long enough in the inactive stage to make sure that the infection had subsided. However, I also visited some very large institutions called convalescent homes, in which there were large numbers of children who were in the inactive phase of the disease. That was one thing we did not want in our program—institutionalizing children during the inactive phase.

Dr. Walsh, you have had considerable experience with sanatorial care. I wonder if you would like to discuss it.

DR. WALSH. Yes, I was Dr. Jones' resident for more than 3 years at the Good Samaritan and I have worked with the District program, in which we have, with the help of the Children's Bureau, established a 44-bed unit for the prolonged care of children with rheumatic fever. The children come to us mainly from two sources: The large municipal hospital, Gallinger, and the Children's Hospital.

In our unit we have rooms containing no more than three beds. The advantage of small rooms in the control of the spread of upper respiratory infections and sore throat is most important. Our unit is on one floor of what we call the crippled children's building; the lower floor is occupied by children with orthopedic deformities, and the basement contains our clinic. Our unit is located on the grounds of the municipal hospital at Gallinger, where we have available to us competent surgical, dental, and other needed consultants. I think availability of competent specialists is of importance, for these children get ailments other than rheumatic fever and occasionally have to be operated on, have to have teeth out, get pneumonia, fall out of bed and break something.

We have the problem of white and colored here. The children are separated as to color, as is the custom in this part of the world, and we occasionally have a little difficulty there, but not much.

The staff is particularly well educated and trained, although we have to teach rheumatic fever almost continually because the staff keeps changing. I think Dr. Gibson hit on a good solution in having personnel who get their training by experience, especially the nurses. Nurses get to know a great deal about rheumatic fever if they see a good bit of it, and they are most helpful in deciding many questions about the care of these children. Physicians can't be so sure if they don't see the children most of the day every day.

We allow visitors only once a week, and they are masked. By that means we take a step toward the prevention of respiratory infection in the unit. It is important to do so because it is very easy for a child to get a sore throat and to start all over again, and possibly even die. I have seen it happen many times.

In our unit we take children in any stage of the disease, except those with heart failure; but if children develop heart failure in the unit, we keep them there. We do not let them go home until they have been up for 6 weeks and have three consecutively normal sedimentation rates. There are exceptions, but that is our general rule.

Unfortunately, because of the war, we do not have a resident physician, although I believe that there should be a resident to devote most of his time to these children. The children are discharged to the care of their parents and are followed by us in the clinic at Gallinger or Children's Hospital.

DR. JACKSON. I wonder if Miss Hall from the Medical Social Work Unit would like to say something about where the children should be cared for.

MISS BEATRICE HALL. The practice in the various rheumatic-fever programs varies considerably. It is dependent to a large degree upon the facilities that are available. For instance, one program may utilize institutional care to a much greater extent than another in which foster-home care has been developed. In considering the individual children and their adjustment and progress, we find there are certain children who, given equal advantages from the point of view of physical and medical care, will improve more rapidly in a group than in a foster home and vice versa. The point that I should like to hear discussed further is how to select the right type of facility for the individual child and how the decision can be arrived at by pooling the information and the opinion of all members of the clinic staff and of the parents also. I think the attitude of parents toward institutional and foster-home care is rather an interesting point. To some parents foster-home care is not at all acceptable, even when recommended by a doctor.

We believe that these programs should make provision for various types of care, which should be used in accordance with the needs of the individual patient.

DR. JACKSON. And we ought to include home care. Dr. Galvin, would you like to tell us how you make the decision in your program as to home, sanatorial, or foster-home care?

DR. GALVIN. We use foster-home care very little. We have only a limited number of convalescents' beds and I think the majority of our children, certainly two-thirds, are cared for in their own homes. Our community has never really been educated to the idea of foster-home care. Those children who have been given convalescent home care have mostly been children from underprivileged homes, especially homes where there were other young children. Usually the patients were having their first attacks.

I think in general children in convalescent homes are much happier and better adjusted to the period of illness than children in their own homes. The first 2 weeks are all right, but once they feel better, we have great difficulty in keeping the children happy, adjusted, and contented in their own homes.

DR. JACKSON. Is there more discussion on this point from the floor? If not, I think we shall pass on to cross-infections. Dr. Jones, would you like to start that discussion for us, please?

Control of Cross-Infection

DR. JONES. I shall start by saying it seems to me that in any program of rheumatic fever, no matter where care is given, the patient should be protected from streptococcal infection and in addition should be given good medical and nursing care.

As to the question of cross-infections, I am going to limit my remarks entirely to institutions in which children with active rheumatic fever are being taken care

of as bed patients. I think there was malice aforethought in asking me to discuss this, because 4 years ago we had an epidemic in an 80-bed rheumatic-fever hospital at the Good Samaritan. During a period of about 6 months, we had 47 recurrences of rheumatic fever under observation and 14 deaths directly attributable to the epidemic, which was caused by a single type of streptococcus.

We decided immediately that if we couldn't do any better than that we had better close up shop, so for the past 3 years we have been using a tremendous number of different methods for controlling the spread of infection. Unfortunately, with a war on and with attendant duties, it hasn't always been possible to evaluate the result of these methods in the way we should like. The closer you are to the city, the larger your staff and the more rapid your patient turn-over must be. We have tried to control respiratory infection in our staff by having staff members report such infection promptly, and no person on the staff—doctor, nurse, or anyone else—can go into the building to see any patient until his symptoms have disappeared.

Then comes the question of visitors. I think nearly all the work in streptococcal and upper respiratory infection has stressed the fact that children are far more dangerous than adults, so no visitor under 18 years of age is admitted. We allow many more visitors than Dr. Walsh does, but they are cautioned about respiratory infections and they wear masks. I think the masks are largely helpful in making them continually aware of the problem.

Now the question is, What are you going to do with the new patient, particularly if you are taking very sick children? We routinely culture every patient as he comes in. Whenever possible, I think it is very important to do so. We have gone one step further and have typed the group A streptococci found in a child's throat. If the results are positive, and if we do not know what the organism is doing as far as infection is concerned, we isolate the child. After two or three repeated negative cultures, the child is removed from isolation. If the streptococcus is a chronic-carrier type, the child can be safely put back with the other children; but if an unknown type is found, or a type associated with rheumatic fever, one runs a great risk if such a child is put back into the normal population.

Now if a respiratory infection should occur among your patients, what are you going to do about it? You will isolate, of course, as quickly as possible, but that is about like locking the barn door after the horse is stolen. Bacteriologically it has been our experience that all our recurrences have followed streptococcal invasion without clinical tonsillitis, so it has been a very difficult problem. We do isolate, however, and we have found it efficacious not only to isolate the patient but to isolate him in a particular part of the hospital. That is because of the mode of spread of air-borne infection, a subject that is receiving more and more attention. If you put a patient on the side of the hospital where the prevailing winds will carry air from his room into the general reservoir, you have a very good chance of spread, even though the patient is isolated.

There are other very pertinent considerations in the spread of respiratory infections. For instance, the smaller the group, the less likelihood of trouble. That is one of the great values of the foster-home treatment, and the foster homes in Boston have been tremendously successful in caring for these children, the very ill ones. As you all know, dating back to the Crimean War, standards of so many square feet per man have been established for Army and Navy quarters—50 square feet and 450 cubic feet per man. Yet many infections occur in the Army and Navy. In a military group this year infections

occurred throughout a fairly large population. It is demonstrable that the respiratory infections have gone hand in hand, not with the number of square feet or the number of cubic feet per man, but with the total number of men in an enclosed space—that is, sleeping in an enclosed space, because their waking activities seem to have very little to do with it. It has been our constant feeling in institutions that if we have groups, the smaller the group, the less the difficulty. Ideally I think it would be very nice to use cubicles, but for psychological reasons it is important to have children together.

Another thing is controlling the admission of additional contamination to your hospital air. Having no more than six patients in a room will prevent the spread of any given infection among more than that very limited number. We have had one small epidemic in which all the patients in a room got streptococcal infection, but it did not affect the whole hospital. In the earlier epidemic I told you about, the whole hospital was affected.

There are a number of other features that common sense tells us are very important, such as ventilation. There is one sanatorium in which care of the rheumatic-fever patient is based on the theory of dilution of contamination; by good ventilation you can vary your possibilities of air-borne infection. Another feature is dust control; that is very important because when the beds are made in the morning a lot of lint is stirred up. The dust content and the bacteria content of the air go hand in hand, and in the very early morning when the children are awakened and there is a lot of activity in the room, what with getting their breakfasts and making their beds, the bacterial content goes very high and doesn't go down for 2 or 3 hours.

The British have done a great deal of work on this, particularly by oiling floors so as to hold dust and bacteria. Certainly we can avoid dry sweeping of floors, which does nothing but increase the bacterial and dust content of the air the children breathe. We can also see that our floors are not kept so highly polished that any draft will send up lint and dust into the air. We can use wet mops and treated mops of various sorts. Perhaps some institutions may allow oil. The British have gone even further than that and some institutions are using a paraffin mixture for the bedclothes so that they do not shed dust but will hold anything that falls on them.

Then there is the question of ultraviolet radiation, which has received a good deal of favorable attention. There is no doubt that ultraviolet radiation has an effect that may be very important. Under the present methods of irradiation, however, its practicability is questionable. For 3 years we have had some of our wards radiated and some not. We have had no epidemics, but we have had the same types of streptococci in our radiated as in our nonradiated wards.

Another interesting possibility is the use of so-called aerosols. Work has gone on, particularly in England, and for the last 2 years Dr. Robertson and his group in the University of Chicago have been using a chemical spray, propylene glycol, which apparently is very safe as far as fire is concerned and will kill bacteria on dust particles in a very high dilution in the air. Dr. Robeson's work is exceedingly interesting and now he is to continue it in the armed forces. We shall probably have further developments within the next few years. However, we don't know yet whether the difficulties of keeping the chemical at a constant level in the air and the fact that doors are opened and closed will interfere practically with the result. It is probable that many chemicals, if sprayed into the air, will kill bacteria. These are very promising possibilities for the future.

By using common sense and by making sure that no known contaminants are added to the general air space, I think one can be reasonably safe in caring for rheumatics in institutions.

I should just like to say in closing that while I am firmly convinced of the close association of streptococcal infections and rheumatic fever, I feel very strongly that they follow epidemic patterns, rheumatic fever being associated with streptococcal epidemics. We had one very discouraging, but also possibly enlightening, experience this spring. We have a good many children who have heart failure, some of whom have been sick from 1 to 3 years. At the beginning of March, five or six such children simultaneously got worse. There was no change in the throat flora of any of these children or of the hospital personnel at any time; there was no immunological change in any of these children or of the hospital personnel at any time. There were no temperature rises. Yet they all had a definite, real increase in heart failure and one died. Simultaneously with that, two children in a radiated ward who had no streptococci or throat infections developed large livers. In addition to that three or four children developed signs of typical chorea. As far as I am aware, that is the first time in 3 years such a thing has happened. We have had children that waxed and waned but never simultaneously in these three types of manifestation. Nevertheless, the best I can say is that although protecting patients from streptococcal infections is of major importance, there may be additional unknown factors.

DR. JACKSON. Dr. Hollaender, I believe you have had some special experience with ultraviolet irradiation.

DR. HOLLAENDER. I am very sorry to say that many installations that have been put in children's hospitals are very inadequate. Ultraviolet irradiation is not a substitute for cleanliness. I think one should pay very much attention to the control of dust and lint, and only then to ultraviolet irradiation. Exposing one-third of the room to irradiation may not be sufficient. We now recommend irradiation of the floor in children's wards or hospitals. We feel that ultraviolet radiation can be used successfully in fixtures that can be placed on the under side of beds and the amount of irradiation can be increased sufficiently to reduce considerably the microorganisms attached to dust and lint. Upper-air irradiation alone may not be enough.

One result of irradiation in many children's hospitals in which children are exposed to excessive amounts of ultraviolet is tanning of their foreheads and conjunctivitis. We found that frequently no measurements had been made of the amount of ultraviolet irradiation children were exposed to, in spite of the fact that there are definite rules for the amount of irradiation that can be safely used.

If ultraviolet lamps are to be installed in any children's hospital or in children's wards, it is extremely important to make a careful survey of the air currents, dust control, and the proper amount of ultraviolet that would be necessary to control bacteria. In regard to the glycol studies that have been going on, it had been reported that glycol is not effective in killing microorganisms in dust and lint. It will kill only free, floating microorganisms. Floor dust and lint have to be mixed with chemicals that are more effective in killing microorganisms.

Returning to the value of irradiation, I should like to recommend that persons planning installations get in touch with people who have experience with them. Otherwise there may be harmful results.

DR. JACKSON. Would anyone else like to make a comment on bacterial control in institutions? If not, we shall recess for a few minutes.

[Short recess.]

Problems Involved in Long-Time Care of Rheumatic Children

DR. JACKSON. We have left for discussion some special problems involved in the long-time care of children in institutions. I should like to call on Miss Jordan to discuss long-time care from the nursing standpoint.

MISS JORDAN. The problems of long-time care that are listed on the agenda are not the ones that bother me. I believe most of those can be solved if we have the patience, the ingenuity, the physical plant, and the money. In addition, it wouldn't do much good for me to tell you what our solutions to the problems listed are because every sanatorium or convalescent home has a slightly different set of conditions and our solutions would hardly apply.

Three problems that have not yet been discussed bother me considerably more. The first of these is how to provide a homelike atmosphere in an institution; the second is how to obtain an adequately trained staff; and the third is how to control the normal activity of those children who do not feel sick but need to stay in bed. The need for providing a homelike atmosphere has been expressed by a great many persons. No one who is working with children would deny the fact that we must work with the whole child. We are taking care of children in a period in their lives when they are unfolding, growing, and changing, and we cannot afford to disregard that fact when they are under our care in the sanatorium or convalescent home. At Sharon our slogan is "Building lives as well as health." Now I don't know what kind of lives we are going to turn out in some of our children, but I hope I shall be privileged to see some of them later and find out whether we have contributed or not.

One of our workers recently expressed the idea that long-time care differs from short-term temporary illness in that it involves the developmental problems of the children. Children in a home would have many problems; they would have responsibilities; they would have little housekeeping chores; they would have the handling of money when going to the store and buying things for the family; they would have the sharing that goes on in a home; they would have the social contact of going back and forth to school. Consequently, they would have to make decisions about the conflicts and difficulties that come up in these relationships. We don't get these in the sanatorium or convalescent home; the best we can do is to take advantage of situations that are similar to those in the home and work with them. Convalescent care in the institution, therefore, presents a perpetual challenge to us. To meet it, we must make use of the children's minds as well as their bodies; we must provide play as well as rest; we have to take into consideration the making of decisions and judgments; we have to take care of the children's need for affection, their sense of security, their fairness to one another.

In other words, convalescent care to be effective must present in the life of the child a dynamic, creative force. A sanatorium or convalescent home, then, must not be just a boarding home in the country. We must try to provide the atmosphere of a good home. True enough, not all our children come from good homes, but at least we can pick out the essentials of a good home and try to put them into the lives of these children. Since we have them in sanatoriums or convalescent institutions for a minimum of 8 months, we can't afford to let that time go unused.

How we solve the problem is, I think, dependent upon the training and the kind of personalities we have on our professional staff. I don't want to say too much about staff because I understand plenty will be said about it on the last day of the conference. Possibly a suggestion as to the kinds of workers that

should be employed in convalescent institutions in order to give proper care should include nurses, teachers, recreational workers, a dietitian, or at least someone who has had graduate work in nutrition, a social worker, and a body of semiskilled workers who know how to handle children.

The professional workers in these institutions need not only to be good people in their own fields but they also need to be trained in rheumatic fever. I think it was Dr. Jones who said you don't know rheumatic fever until you live with it, and I think he is right, for living with rheumatic fever certainly teaches you things about it that the textbook or occasional visits to a hospital do not.

These two factors—the provision of a homelike atmosphere in the institution and of adequately trained workers—are very closely tied up with a third problem, that of the activity of the children. We take no child into the sanatorium who has congestive failure or chorea. For the most part, we are dealing with the child who is recently over the acute stage of rheumatic fever and is in that long-drawn-out process of subsiding infection, plus the stage in which we think the infection has subsided.

There is one thing about children that one cannot get around—the child is by nature active; he is not passive. I remember once when I was a student nurse I had been taking care of a very sick cardiac child. One morning out of the gray of the dawn the youngster raised herself on her elbow and leaned through the bars of the white crib and said, "Mith Jordan, may I have a hair ribbon on today?" Now that represented in that child's life a feeling-betterness. The chart didn't look too much better in the morning, but that child took a turn and from then on was more active. Children take kindly to passive nursing care only when they are very ill, and so these youngsters who are convalescing from rheumatic fever and do not feel ill are naturally active. The problem is—what can you do to control that activity? Every time I read somebody's article about bed rest I look over my group and say, "Well, I am afraid I am not doing a very good job of bed rest," but if somebody will tell me how to control the child's natural activity and still keep him normal, I should like to know about it.

One reason children with rheumatic fever present us with this activity problem is because they have had the disease for a long time; and, although ill, they feel fairly well and, consequently, they are like a little boy with active carditis who recently got out of bed and who said, after I had finished trying to teach him why he shouldn't have done it: "But you don't understand, Miss Jordan. I don't feel sick." It is natural for children to be like steam valves and eventually to go off. If you have ever tired to halt a mountain stream, you know that it always comes out in some other pathway down the mountainside. So, too, do these children—you can repress them, divert their energies, think you are entertaining them, provide them with hobbies, but there is always a time when they have to, as the nurses say, whoop it up, and I don't know how you can control that.

It takes a variety of recreational workers to keep these children in as good a state of relaxation and rest as is possible when they are receiving bed care. We have had a graduate occupational therapist who for 1 year has done everything she could to meet the needs of these youngsters and finally decided she is only one-fourth of enough persons. There should be, I think, a resident recreation person on the staff of each unit in an institution to provide the kind of help these children need. In other words, it isn't going to do any good just to provide handicraft activity from 2 to 4 o'clock. If you haven't taken care of some other hour in the day when the child has really wanted to use her own creativeness and make something, you have not filled her need. If a handicraft worker were a resident member of a unit staff, she might be able, by being there at all times, not only to help the children in their activity and make use of their desire to get

off steam, but also to lead them into some future hobby or interest with a more permanent value to them than the usual handicraft work has.

Then when you have children who are up and about, a different type of activity is needed. They don't like to sit and do handicraft work; they don't like knitting and that sort of thing. They need more activity like that of the 4-H program, more of the kind of thing that really is useful. Care of these children presents quite a problem because some are fully ambulatory and some semi-ambulatory. Whether or not one should divide one group from the other, I am not too certain. What we try to do is to find an activity that will include all of them.

Then, too, in that group of ambulatory patients there are restricted and non-restricted children. We have decided, with regard to most of the children, that if a doctor says they have no appreciable heart damage, they may return to normal living; so instead of saying as we did a year ago, "Don't run," we now watch them run and see what happens. I think that they are reacting better to this attitude and they are not quite so curtailed and shut in as they were a year ago.

Now, as to rest hours—we used to make the children go to sleep, supposedly. Well, the average child of 8 to 12 doesn't lie down and go to sleep at home except when he is tired, so now we are trying to build an adult habit of resting rather than sleeping. After providing for proper lighting and proper position in bed, we allow the children to read or to thumb the pictures of a book for a while. After about 20 minutes they begin to relax and want to go to sleep, whereas if one does not let them have something in their hands, their hands and feet go, they change their position, they peek over to see their neighbors, whisper, and are generally restless.[2]

Combating such restlessness in the children takes a great deal of training and thought. However, if one can learn to anticipate restlessness, the children can often be kept at a more consistent level of rest.

We have a regular schedule of increasing activity. Once the doctor allows a child to get up, it takes approximately 9 weeks for him or her to get to full activity, and at the end of that time the child stays a minimum of 8 weeks longer, so that when he returns to his family and his home he is a participating citizen. Most of our children are able to go home and maintain their places in the public-school system, according to the communications we have from the schools.

To summarize, I would say that the fundamental problems in long-time care are: Trying to maintain homelikeness in the institution; trying to get enough workers with the same philosophy and the same background to maintain this homelike atmosphere and to fulfill the children's needs; and trying to control the children's activity in order to give them the rest that sanatorial care is supposed to give.

DR. JACKSON. We certainly are indebted to you, Miss Jordan, for your excellent presentation.

There is such a close correlation between all the special problems of long-time care that we should probably discuss them together. Dr. George Stevenson, I wonder if you would like to give us some help in this matter.

DR. STEVENSON. I suppose if I were as wise as I am interested, I might better just sit and listen, since I have had practically no experience with this kind of problem. The discussion has been provocative, however. The general principle upon which I work is that if the mental health is to be taken care of, it is to be taken care of through leadership in the various fields and not through

[2] Louise F. Galvin, M. D.: The Virginia program for children with rheumatic fever. The Child **6**: 164 (January) 1942.

the imposition of any directions from outside. I think Miss Jordan's presentation is a good example of that, because it shows full appreciation of the problems that must be met in this situation of long-time sanatorial care. There is one thing that I think requires some thought, namely that there may be certain conditions in the situation that tend to produce behavior difficulties.

In the development of behavior difficulties I see four sets of conditions. There are general physical factors, which include such things as fatigue and infection and disturbances of nutrition and sleep. Then there are such other sensitizing factors as Miss Jordan has spoken of. We might speak of them as the critical periods of life, periods in which things are rapidly happening to children. They are sensitizing periods, too; at such times behavior difficulties or special attitudes are more apt to become fixed. Third, there are factors, such as local irritants, that fix the patterns of the attitude or the behavior. An example is the child in bed with chorea, who is attempting the development of certain voluntary movements to obscure and control the involuntary movements that come with the chorea; possibly we could work out some way of diverting the child's effort to control his involuntary movements by substituting activities other than in tics. Fourthly, patterns are fixed through the emotional irritants that come from separation from the home, anxiety about the illness, the parents' reflection of this anxiety, and things of that sort. These attitudes are in many respects comparable to tics, but the attitudes are much less tangible and much more difficult to deal with, although their eventual effect is much more serious.

Miss Jordan has pointed out that at best institutional living is abnormal and that every effort must be made to bring it closer to the child's normal situation; it must not be considered as a gap, because it can't be a gap.

DR. JACKSON. Maybe Mrs. Ziegler has other ideas.

MRS. ZIEGLER. Our greatest problem is that the children who still have rheumatic fever but who are free of symptoms don't want to stay in bed, think they are feeling fine, and don't see why they can't get up. We have had the same sort of problem Miss Jordan has pointed out. I think that has been the greatest difficulty. Maybe Dr. Hightower will have something to say.

DR. JACKSON. I am sure that is not a local problem; it is universal. Doctor, would you like to discuss it further?

DR. HIGHTOWER. Everybody knows that children who are feeling well and who have no obvious physical defect are hard to control. They want to get going, they are always eager to explore things, and it is pretty hard to find people to divert them throughout the whole day. We have felt recently at our clinic that students from one of the high schools may prove useful in handling the children during the hour when we have no occupational therapy, no school teaching, and no therapeutic procedures going on. We hope to have two girls come in every day from 5 to 7, after the children have had their evening meal, to read to them and amuse them until bedtime comes. That has been the period in the day that has presented the greatest difficulty, as far as handling the children is concerned.

DR. JACKSON. Dr. Galvin, how have you met this problem with your group?

DR. GALVIN. We have only two small units for convalescent care, one for white and one for Negro children. The supervisor of nurses, Miss Ross, is here from our Negro unit.

DR. JACKSON. Miss Ross, would you like to carry on?

MISS ROSS. Our funds are limited. However, we have the interest of these children at heart; therefore, we go out into the community and contact citizens who might help us in carrying out this program, in making it more efficient, in giving the children better care and in occupying their time, which, as has been

stated, is one of the most important things for the children during this period, in order that they may get physical and mental rest.

We have been successful in stimulating the children along various lines. We have started a Sunday school within the unit; this is under the supervision of the First African Baptist Church, located in the city. The church supplies the standard Baptist literature. The children have officers, including a secretary to keep the books. Members from the Young Men's League of the First African Baptist Church come out on Sundays and teach the lessons to the children. Persons from other Sunday schools also come out. The children are very much interested in the Sunday-school work.

They are also interested in their school work. We are not fortunate enough to have a teacher who can be with the children each day throughout the week. But the school board furnishes a teacher 3 days a week. During the same period on the other 2 days—from 9 until 11—the children study and prepare their lessons; therefore, that time is occupied.

Also, we have a trained occupational therapist, who serves freely. She has charge of the occupational workshop. Because of her interest and her eagerness to cooperate in this program she has offered her time to come out and teach the children various trades. The children carry on this work, when the teacher is not present, under the supervision of the nurses.

The children are under constant supervision and I can truthfully say we have met all the problems that I have heard discussed here today. Probably it is because the children are under such constant supervision that during rest hours we have no trouble at all about their going to sleep. We have no trouble at all with their eating their meals. Of course, we attribute our success in getting them to eat their meals to other things; for instance, the nutrition consultant of the State health department has assisted us quite a bit by coming out and giving classes in nutrition. Also the children are shown educational movies about proper diets and they are taught to play various games that have to do with food. Colorful food posters are placed around the rooms, too. One game that has helped the children quite a great deal is called Vita-Mingo. Each child has a little card to score the vitamins he has eaten in his day's meals. The first day we played this game each of us had a card and figured out our score. When the children got to hominy grits, they found grits didn't rate even one point. Since then, they have refused to eat grits.

There is close relationship between the families and the children. The members of the family are responsible for the school supplies, the laundry, and the personal belongings of the child, which makes each child receive a visit from some member of the family at least once a week. The children are fond of receiving mail; they are always wanting to know, "Did I receive a letter today? Has the mailman come?" In order to receive mail they have to write, so the nurses in the unit are constantly writing letters for them. Several of the children's fathers or uncles are in the armed forces and we are constantly writing letters and they are receiving them, which keeps a relationship with the family.

We have other activities, such as birthday parties for each child in the unit. When one birthday party is over, the first thing they say is, "Who is next?" So we get ready for the next birthday. Of course, we have exercises at Christmas time and we try as much as possible to have children do what they would be doing at home at the same time. They also have visits from children who were former patients. I think it encourages the sick children to see children who have recovered and look well and it gives them great hope that in the future they, too, may be able to go about and be well.

Dr. Jackson. Has the State of Washington something to add on diversional and school activities?

Dr. Guy. Dr. Fischer is the pediatrician in the city of Spokane, where our rheumatic-fever program is in operation, and by virtue of being a member of the school board, he has been able to arrange for the services of a school teacher. We have a problem in connection with that. We have a small convalescent hospital or home of 15 beds; just at this time of the year our population is down to 8. If we go below 8, the Spokane schools will not furnish the school teacher. Maybe some of you can help us with that problem. Last year we managed to get by because we had 8 all year. This year our population has gone down much earlier and faster than it did last year.

Dr. Jackson. Dr. Smith, have you something you would like to tell us about your problem in Utah?

Dr. Eugene Smith. We have a very small convalescent home for about four or five children. The children more or less entertain themselves. We have a law in the State of Utah that requires the board of education to furnish us with a teacher, but there are always ways of getting around laws. Until we sicked the P. T. A. on the board of education we didn't do very well; but the P. T. A. gets results, so now we have a visiting teacher come.

We have a nurse who is quite a character herself, and she seems to provide just the sort of entertainment the children need. The children have been very happy and contented. Although they are of different ages, they seem to get along very nicely together.

One mother was very reluctant to have her child stay in the convalescent home—she was afraid he would be homesick—but when he was ready to be discharged, he wanted to know if he really had to go home. So I think the children are happy. I think children should be left to their own devices more. I do not know just how much supervision they need. A lot of children need a little more freedom to work out their own problems. Our place is very small, but I think it has rehabilitated enough children to prove its worth.

Dr. Jackson. Dr. Helen Johnson from California, would you start the discussion on the relationship of the child to his family when the child is receiving sanatorial care?

Maintaining Contact With the Family

Dr. Johnson. In a program that perhaps is a small sample of socialized medicine, we have felt that maintaining the doctor-patient relationship with the family is quite important. Instead of treating our patients as if they were just the occupants of a county hospital, we treat them rather as if they were our own private patients, and with that as a premise, we maintain a direct relationship with the parents from the time of the first clinic appointment. While the child is in the hospital, I plan to be there at least once a month when his parents visit him, as they are very eager to know from the doctor just how the child is progressing. Because public transportation is very crowded with servicemen on Sundays, an attempt is made to aid the families in getting extra gasoline to make weekly or monthly visits to their children. Letters to the ration board sometimes produce favorable results but often the request is denied. We should like to know if there are any legal means of getting gasoline for the parents to visit a child who is chronically ill.

Dr. Jackson. Has anybody an answer to this question about getting more gasoline?

Miss Jordan. We tell the ration board the child's diagnosis, the approximate length of his stay in the institution, and that in our medical judgment it is neces-

sary to this child's progress that the parents be allowed to visit him. To date we have been successful. We have been doing this ever since gas rationing came in and have never been refused.

DR. JOHNSON. That sounds like what we say, but it doesn't always work, because we live in an area where so many war workers get extra gasoline that some of the boards are pretty hard-boiled.

DELEGATE. There is the ethical question as to whether we should ask for gas. In our State people sometimes travel a great distance, 250 and 300 miles. Possibly some substitute method should be set up for keeping the family in touch with the child.

DR. JACKSON. I think that is a good point. We have the same problem in our area because our children come from the entire State. We have not made any special effort to obtain permission for the family to visit, but there is so much travel to and from our particular point that most families are able to make special arrangements of their own.

MISS ALLEN. In Pennsylvania we have asked the Crippled Children's Society in the capital, 18 miles away from the hospital, to use a legacy they received, an amount of some $500, to send a bus up to the hospital once a month. The parents congregate at the station and are met there and taken out to the hospital. This has worked very well and consumes less gas than several cars would.

Our visiting day is Sunday, but some mothers can come more easily on other days. I think we have to be flexible about visiting hours and try to work out whatever method we can in centers where children are being treated.

DR. JACKSON. We ask the nursing staff to relinquish its strict ruling about visiting hours when families come from long distances. I wonder if Miss Bartlett would like to present her ideas on the relationship of the family and the preparation of the child for discharge.

Preparation for the Child's Discharge and Aftercare

MISS BARTLETT. There are two matters I should like to stress from the point of view of medical-social work, in private as well as in public programs. I had the opportunity to participate in a project in Boston, where for 5 years a rheumatic-fever clinic in a large general hospital and a children's agency cooperated in following a group of children rather intensively, watching particularly the relationship between the social and medical factors. I should like to go into the matter of planning discharge. Our experience shows the time of discharge to be a strategic moment in cases that required long-time care and were potentially recurrent. As we evaluated our work, we found ourselves saying, "If we had only done a better job at that moment when the child was about to leave the hospital. If we had taken a long look, we would have avoided many difficulties and would have done a more effective total job." I have in mind not only such factors as home set-up and family composition but also the readiness of the family to take responsibility for the child's care. Often when a cardiac condition exists, the family fears what that responsibility may mean. If we can help the family at this point to develop confidence, accept responsibility, and participate in the planning instead of offering them a ready-made plan, we may have quite different results.

I should also like to emphasize the need for and the use of services auxiliary to the physician's service, not only in the hospital and clinic, but also in private practice. The nurse, the medical-social worker, the occupational therapist, and others are needed in varying degrees in individual situations, but all are needed in the total program. There is also need to bring in the organized social re-

sources of the community. In the Boston project we made a point of watching the correlation of these services. All of them were available either in our project or in the community. We carried occupational therapy, social work, and other services into the child's own home or the foster home along with the doctor's visits. We found that in any group of families there are always some who can carry the care themselves if we can give them a certain amount of supporting service of this kind. It was thus possible for some children, who would be happier in their own homes, to receive the necessary care without being separated from their families.

DR. JACKSON. I wonder if Miss Banker would give us something on this problem from the standpoint of the nurse.

MISS BANKER. Our hospital-school set-up is very small. The program was built around the care of 50 crippled children. However, we do give convalescent care and educational opportunities to children who have rheumatic fever. We probably are unique in that when the child comes in to us, not only a medical history comes with the child but a social history comes as well, written up by a medical-social worker; so we already know the child, and if a behavior problem exists, we have a conference with the social worker before the child's admission to the hospital school. We know what approach we are going to use for any problem that we might find.

Insofar as getting ready for discharge is concerned, we begin on that almost the day the child is admitted, because we know that the child is going to go home with his handicap and the family will have to accept that child in the home with his handicap. Social workers keep in touch with these children through their stay at the hospital. At least once a month every parent has an opportunity to meet and discuss the progress of the child with the head of every department, which includes the nursing and dietary departments and the departments of occupational therapy, physiotherapy, and education.

When the child is ready to go home, the doctor's notes are sent to the clinic social-service worker. She pays a visit to the parent, informs him when the child will be home, and helps the parent make the necessary preparations so that the home and the family will be ready to receive the child. A case summary is made, which includes a report from the head of every department who has handled the child, stating the medication given, any treatments given, the progress made, and all recommendations.

In cases in which we feel it is advisable, we invite the parent in to spend a day with us. The parent goes through the daily routine with the child and watches the physiotherapy treatment, if any is given, or the child's exercises, if they are to be continued at home. A typed instruction sheet is often made out and gone over in detail with the parent.

May I also say something about diversional activities? We accept children from infancy up through 21 years of age. We have school teachers covering the work from the preschool grade through high school, and a recreational director. We have Boy Scout and Girl Scout meetings, things of that kind. Our older boys and girls have helped plan and set up a first-aid unit for our township. They spend one evening a week making supplies and we sterilize them and prepare them. They feel that everything that is done in the hospital school is partly their responsibility. Our older girls and boys have formed a student organization.

DR. JACKSON. I think we had better open the discussion of special problems, as our time is about up. Does anyone have further comments or questions?

DR. JONES. I should like to ask a question for some of the workers to discuss. How do the problems arising in connection with home care compare with

those arising in foster-home care or institutional care? It is very heartening to me, having watched this program and knowing how well it was done, that the children who have had institutional care, made possible by all sorts of community activities and methods, have all had an infinitely better psychological approach to their disease than have those taken care of at home. We have people like Miss Jordan and Miss Ross running these institutions, giving these children what they can't get in the homes they come from. I think the children get a tremendous lot more than in the home in which the mother finds it difficult to understand the problems of rheumatic fever. Then, too, when occupational therapists, school teachers, doctors, and social workers add their help in care of the child at home, he often gets an exaggerated idea of his own importance and probably a poorer understanding of his disease than does the child in the institution, where patients have not only been happy but have gotten something in addition to treatment of their disease.

DR. JACKSON. That depends on the institution. We will all agree that much of value is acquired if the institution is well run. Miss Cohen, would you like to add something to Dr. Jones' comment?

MISS COHEN. I want to ask Dr. Jones if the individual factor isn't a very important consideration in this question he brings out. While it is true that for many children the institutional type of care would actually be the best possible set-up, for certain other children their own homes or foster homes might be best. The opportunity to understand the child in his home environment can be used to advantage by a person able to make a true evaluation and can help him decide where that child can best be taken care of.

I think you are perfectly right that many children would be infinitely better off in group care, when there are good facilities to meet their needs; but, from my point of view, it is of the greatest importance to stress the study of each individual child and his home in determining the type of care that is best for him.

DR. JONES. I have seen these children growing into adolescence and early adult life, many of them with no opportunity for education or for group care. Often they have developed very poor reactions to their disease in homes without good parental control. Study must be made of each individual case, of course, but we can accomplish very much en masse and it is necessary for us to spread our effort.

DR. JACKSON. Does anyone else have anything to contribute?

MRS. ROHRET. You might be interested in the way we plan for crippled and handicapped children who are admitted to the Children's Hospital in Iowa. As soon as such a patient is admitted, the parents are referred to the hospital social worker. We begin at that point to plan for the child's discharge because we are of the opinion that no patient should be kept in the hospital longer than is actually necessary. The case is then referred to the field social worker on our service so that she may call on the local social worker and nurse when she is in the community to interpret the patient and his needs to them. Occasionally those workers invite us to go with them to the child's home so that they and we may learn more about the situation there and be in a better position to plan together for the child. These community and home contacts are reported to the hospital social worker and the doctors in our conferences. The field worker tries to know as many of the patients as possible so that she may be able to report to the local workers who are interested in them, and in this exchange of information our doctors are kept pretty well informed about the patient's home and what can be expected there and also they are given

some idea of what can be expected from the community when the child is discharged.

Of course, many of our children come from long distances, as much as 275 miles. When we had a full staff, the field worker found it easy to keep in contact with the families, but this is difficult now because we have only one field worker to cover the entire State.

Dr. Breyer. There is another point in preparing the child for discharge that I think no one has mentioned—what we should do about the family physician. Too often we forget him in making our plans and arrangements. I don't think we are quite fair in feeling that the patient is a private patient of the State. We should always feel that we are acting in a consulting capacity and that when the child goes home he is going to be followed by the family physician. If we can't depend on the family physician to take care of the child when our clinics aren't meeting, we are at a great disadvantage. If we would bring the family physician a little more into our plans, it would be an awfully good idea and something he would appreciate no end.

Dr. Jackson. I am in perfect agreement with you. That point will be discussed further tomorrow. Is there any other discussion on the sanatorial aspect of care? If not, the meeting is adjourned.

[The meeting was adjourned at 5 o'clock.]

Wednesday, October 6, 1943—Morning Session

CARE OF THE CHILD WITH ACTIVE RHEUMATIC INFECTION IN HIS OWN HOME OR A FOSTER HOME

Dr. Mills. The topic of this morning's discussion is certainly interesting and important. I believe we will all agree that care of the child with active rheumatic infection in his own home or a foster home, and the follow-up part of our program, are both of the utmost importance. As a matter of fact without adequate follow-up and adequate provision for care in the child's own home, or a foster home, much of the care given in hospitals or convalescent homes would be wasted or of no avail.

Without more ado we shall ask Mrs. Sadler, a public-health nurse of Virginia, to discuss the first topic on our agenda for today.

Mrs. Sadler. The Virginia rheumatic-fever program was inaugurated in 1940. Even though any person under 21 years of age within the State, regardless of income, is eligible for clinic service, only persons living in the City of Richmond and nine surrounding organized counties are eligible for complete service—complete service meaning hospitalization; convalescent-home service; and follow-up medical, nursing, and social services.

Public-Health-Nursing Service Available

Public-health-nursing service available within the City of Richmond proper consists of three groups: The Instructive Visiting Nurse Association, The Richmond Department of Health, and the school nurses. There are local public-health nurses in each of the 9 counties under the State department of health. Thus Richmond, with a population of 244,000, has 22 nurses under the I. V. N. A. giving bedside care with intensive nursing supervision in homes; 22 nurses under

the city department of health giving generalized home supervision to arrested and suspected cases; and 17 nurses under the school board giving supervision only to school-age children during the school term. In each of the 9 counties there is at least one public-health nurse who will make supervisory home visits and give nursing demonstrations.

Nearly every child in the rheumatic-fever case load receives care from one of these local nurses. We say "nearly," because there are a few private physicians who request consultation only, with no request for follow-up services. Since the beginning of the program, an attempt has been made to make each nurse in the area "rheumatic-fever conscious" and to give every child adequate nursing service with a minimum of overlapping. Meetings are held separately and jointly with the four directors of nursing service—three in the city and one out in the State. This correlation is sometimes difficult, and what we have done in this direction can probably best be shown by illustration of a typical case.

Shirley Martin, a 10-year-old boy, is reported to the program as a suspected case of rheumatic fever by the school nurse on a specific form entitled "Suspected Rheumatic-Fever Cases." This special form is put in the files in the folder labeled "Nurses' Referrals, Pending," since on it the school nurse states that the mother promises to take the boy to his family physician.

Three days later the family physician requests an appointment to the rheumatic-fever clinic by means of the regular physician's application form. The family physician requests that the clinic findings be told the parents by the clinic pediatrician and that the necessary follow-up care be given. Thus the day after Shirley's clinic visit, his parents come back to the clinic and are told that the pediatrician's diagnosis is acute rheumatic fever and myocarditis. The disease and the proposed treatment are discussed with the parents. In this way the parents learn what they are to expect and what they must prepare for—a long period of bed rest for Shirley. The parents are also told that another nurse, this time the visiting nurse, will come to their home to give care and to assist the family in planning for Shirley's treatment at home.

Immediately following Shirley's clinic visit, the clinic pediatrician sends a physician's referral slip to the I. V. N. A. and a duplicate to the city department of health for the city rheumatic-fever register. This slip records the doctor's findings, diagnosis, specific orders, and other pertinent facts.

An emergency conference is then held with the school nurse (who has previously visited the home), the visiting nurse and her supervisor, and the rheumatic-fever consultant nurse, to pool information and make plans for long-time nursing supervision. When the visiting nurse makes her home visit immediately after receipt of the clinic pediatrician's orders, her immediate objective is to gain the confidence of patient and family, for on this depends the success of all public-health nursing. She interprets the diagnosis and orders, explaining the purpose of each order to apprehensive Shirley and his mother. She gives Shirley a bath, followed by an alcohol rub, explaining as well as demonstrating to the mother that no active motion on Shirley's part should be allowed. Rectal temperature for 5 minutes is taken while the patient is on his side, as the alcohol rub is being given. The mother is shown how to change the bed linen, how to brush the patient's teeth, how to support Shirley while giving the bedpan (a small round basin). Also the mother is told the simplest way to give medications. Much discussion follows with regard to comfortable positions in bed, for there is a great deal of difference between being in bed and really resting in bed.

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When lying flat, Shirley would need one pillow under his head, a knee roll, a bed cradle over his ankles, and a foot prop. This support for the feet is to be firm—not pillows—and must be wide enough to give complete support to toes as well as heels. Until the swelling in the joints subsides, Shirley is to be turned several times during the day—with a pillow for support at back, between knees, and under arm. When the swelling subsides, he may turn to any position desired as long as he stays flat. For meals, Shirley is to have a firm, low backrest and lap table when desired. The mother is shown how to feed him after placing him on the backrest. When Shirley has rested 20 minutes after his bath, the nurse counts pulse and respiration for a full minute each.

Adequate care by the mother on days when the nurse does not come seems more probable after the nurse has not only demonstrated procedures of nursing care, but also has assisted the mother in arranging Shirley's schedule so that it will coincide with the family schedule; thus the mother can do the necessary housework and look after Shirley at the same time. The nurse tells the mother that a child on a regular schedule is happier because he knows what is coming next and can anticipate pleasant periods as well as get unpleasant tasks over with quickly. Before the nurse leaves the home, she completes her record, arranges for the nurse's fee through an industrial-insurance policy, and fills out a nurse's report slip to the clinic pediatrician, giving a complete picture of the situation in the home and the nursing care given.

For the first month she continues to visit the home three times weekly, sending a weekly report to the clinic pediatrician. During this period she manages to read articles from the bibliography on rheumatic fever prepared for the nursing agencies by the rheumatic-fever staff and also to have at least one conference with the consultant nurse who comes to the I. V. N. A. offices once weekly for this purpose. The I. V. N. A. supervisor usually arranges and attends these conferences also.

After Shirley's second visit to the clinic he is allowed to wash his own face and hands, brush his teeth, and feed himself. This, of course, appears on the physician's referral slip, which is sent the visiting nurse by the clinic pediatrician after each clinic visit. The visiting nurse always transfers this information to her nurse's record.

Two months have passed since Shirley was put to bed. By now he has assumed a great deal of responsibility for keeping his own schedule, the nurse knowing that the more responsibility is placed on a child concerning rest and regular habits, the better the results for long-term periods will be. The mother is now giving the bedside care, the nursing visits having become supervisory only, although the nurse continues to take the child's temperature, pulse, and respiration on her visits twice weekly, carefully reviewing Shirley's schedule with him and his mother, observing the care that is given with special attention to the general hygiene and the mental attitude of the patient and the attitude of the family toward the patient. Special teaching is done with regard to nutritional needs. The nurse realizes that she must plan her visits and not hurry if she is to do a constructive job while in the home.

Arrangements are made for the nurse to visit the rheumatic-fever convalescent home with the consultant nurse. Here she picks up new ideas regarding diversional activity for Shirley. At the end of 3 months, in addition to using the backrest for meal periods, Shirley is permitted to sit up, supported by the backrest, for an additional hour in the morning and afternoon and he is permitted to do light handicraft. Once a day during this period he may be lifted to a cot or couch in the living room, on the porch, or in the yard. The nurse has in-

terested his mother in making changes in Shirley's bedroom so that bright colors are substituted for the drab ones and another bed has been provided for 12-year-old brother Joe. Joe, too, has been examined by the family physician—the nurse explaining to Shirley's mother that all siblings need to be examined periodically even though there are no obvious symptoms of rheumatic fever.

Six months pass. The nurse, who comes weekly now, has visited the local occupational-therapy workshop to glean constructive ideas for activities for Shirley, since it is quite evident that as he feels better he will need a greater variety of things to do. The nurse knows that patients in bed can be guided to develop hobbies that eventually may lead to vocations. Also, she wants to correlate her work with all available agencies that might help. She knows, too, that she must continue to appreciate the psychological problems involved in a long-term illness. She stresses to Shirley the fact that the restrictions imposed on him are only temporary, and thus she obtains a healthier psychological reaction and better cooperation than she might otherwise have been able to achieve.

The nurse knows that Shirley does not want to be excluded from his part in the family life; neither does he want to be estranged from his group of friends. He is very happy that the "Cubs," of which he continues to be a member, now meet regularly around his armchair. Visits from his Sunday-school teacher brighten each Sunday. He, like most children, connects school with winter months, and at the beginning of the school year arrangements are made by the clinic for a visiting teacher from the local school system. The school principal and school nurse are notified, by means of regular prepared school forms, that Shirley will not return to school, and why. A conference is held with the visiting teacher, visiting nurse, clinic pediatrician, and consultant nurse to pool ideas for continuation of plans for Shirley. He now has a long period on the backrest both in the morning and afternoon. He calls one his work period and the other his play period.

Nine months pass, then one year. The teacher continues visiting twice weekly, the nurse weekly—nurse and teacher holding frequent conferences to pool plans. The nurse finds that by visiting irregularly she is better able to obtain a true picture of the child and his parents, for the best of families are likely to become lax. One day the visiting nurse brings another nurse with her to visit Shirley. This is really the student nurse whom Shirley saw in the clinic during one of his bimonthly appointments. Another day the visiting nurse brings the clinic nutritionist with her, the same nutritionist who talked with Shirley and his mother during their vists to the clinic with regard to adequate diet and food budgeting.

When school is out, Shirley receives his report saying that he has passed his grade. His mother, after obtaining the pediatrician's permission, makes plans to take Shirley and his brother to the country to visit their grandmother for the entire summer, since the mother has to go to work. Shirley is still not allowed to walk, although he has free use of the backrest during the day, except for afternoon rest. He can be lifted to wagon, swing, or hammock for long play periods—provided he continues to have his back and feet supported.

Nursing supervision in the country is continued by the local county nurse. Fortunately, the same nurse has just completed her field experience in Richmond and while there has become familiar with the nursing care of rheumatic-fever patients. The consultant nurse visits the county nurse at the local health department, taking with her Shirley's confidential clinic chart, the physician's referral slip, and the visiting nurse's summary of the case. When the county nurse visits Shirley at his grandmother's to assist in establishing a consistent schedule, the grandmother says, even on this initial visit, that the idea of keeping Shirley

off his feet all day is silly because he appears well and she knows that he is able to do what he wants to. Weekly reports by the county nurse after each visit indicate that Shirley is certainly getting unruly. He remains on his feet all day and helps with the farm chores. There is a vacancy at the rheumatic-fever convalescent home at this time, so a bed is offered Shirley for proper completion of his convalescent period.

Four months later, when the consultant nurse visits Shirley at the convalescent home, she brings a new nurse with her, telling Shirley that this new nurse from the city department of health will visit him when he returns home, since no bedside care will be necessary and generalized health supervision will be all that is required. Tentative discharge orders are given to the nurse from the city department of health 1 month before Shirley's discharge from the convalescent home. She immediately visits the home, completing the blank "Preparation of Home for Return of Patient" and sends it to the clinic pediatrician.

When Shirley comes home, his infection is considered inactive. He is allowed to continue in school, coming home for a hot lunch and a long rest period. On Saturdays he attends the occupational-therapy workshop. He is told, of course, that he should go to bed at once at the slightest suggestion of sniffles; otherwise he can do anything he wants to.

Shirley continues in excellent health, as evidenced by the clinic findings and the reports of the nurse from the city department of health. He visits the clinic every 3 months, alternating with appointments every 3 months with his family physician. Before his admission to school, the school nurse, the nurse from the city department of health, and the consultant nurse confer. The school nurse interprets to the teacher Shirley's return to normal health.

Six months after discharge from the convalescent home Shirley is turned over to the school nurse by the nurse from the city department of health, since home visits seem no longer indicated. Shirley, however, will continue to visit the clinic every 6 months for several years, as a safeguard.

Dr. Mills. Thank you, Mrs. Sadler, for a very complete discussion of the nursing care of the child in his own home. I have just one question in mind. During the acute stage, when the nursing supervision is needed quite often, I believe once every 3 weeks, what provision is made in your program for supervision by the physician? Is it the local physician or your clinic physician who comes to the home?

Mrs. Sadler. The family physician usually goes to the child's home. The clinic pediatrician may go—often with the family physician.

Dr. Mills. We all know that a child with rheumatic fever and his family not only have health and medical problems to cope with but often face many social or medical-social problems as well. Miss Giusti of Rhode Island perhaps will speak to us about this particular aspect of the program.

Miss Giusti. I should like to say something about one phase of our social services—foster-home care. We have been operating only a little over a year and a half and we have placed about 12 children out of 150. That is a pretty good number for foster homes, because usually a convalescent institution is chosen for children. We choose foster homes for children we think require an individual type of care. We have had to work with a child-placement agency in Rhode Island, a private agency quite suspicious of governmental agencies, and I think we have succeeded in breaking down some of this suspicion. The foster-home workers attend the clinic, they hear the doctor's recommendation, and they decide upon the type of home best suited for the child. When the child is placed in a foster home, the agency worker, the

clinic medical-social worker, the foster mother, and the mother of the child all sit down with the doctor and discuss that particular child and his needs. We feel that we have been very successful in our foster-home program in Rhode Island.

Another project that we have in Rhode Island concerns a project we started with our nutrition consultant. Among the many problems we had to meet were those related to rationing and food shortage, so we discussed the situation with the maternal and child-health consultant in nutrition and made plans for a special study. The nutrition consultant visits certain homes weekly. She sees each individual mother. The dietary history of each child is discussed. The nutritionist doesn't emphasize the child's diet but takes into consideration the diet of the whole family and tries to adjust the family diet to the child's needs.

Dr. Corrigan suggested that we make a short study to see whether there are common factors in the nutritional history of these children. We took 24 patients, selected on the basis of intelligent, cooperative mothers. We studied the histories of those 24 patients with rheumatic heart disease and we found that 21 of the 24 families had received some kind of public assistance during the child's prenatal period or early childhood, although only 2 of these cases are receiving public assistance at present. This situation was discussed with the present administrator of the department of social welfare. I feel sure our relief budget might benefit by this. The study, according to our nutrition consultant, did not reveal striking lacks of any one common food. However, she didn't find a single diet that she felt was good, so her conclusion was that most of the children studied in this survey had poor diets. Perhaps it might be well to emphasize nutrition in the program.

Which Type of Care Is Preferable?—Home Versus Institutional Care

Dr. Mills. I am wondering if we could take a vote among the delegates from the States on the relative value of care of active rheumatic infection in homes or foster homes as compared with hospitals and convalescent homes. I know, of course, in many instances we have no choice because of lack of alternative facilities. Will someone from each State say just a sentence or two telling whether he feels that care in the home or foster home is preferable. Maine.

Dr. Kobes. We have had to develop our program almost entirely around the care in the home. We have used the foster home as a form of giving follow-up care when the child did not need to be in the hospital yet needed further care. We have no convalescent homes.

Dr. Mills. Maryland.

Dr. Taussig. We have convalescent homes for the white children but none for Negro children. We have used foster homes for the care of Negro children with active rheumatic infection. Foster homes are sometimes much better than the children's own homes, but they are certainly far from ideal. We think foster-home care is not nearly so good as convalescent-home care. We have to educate each individual foster mother and we cannot go out to see the children in each of the homes. Therefore, we can't do as good a job as in convalescent homes.

Dr. Mills. Minnesota.

Dr. Dwan. I feel foster homes have a place in the program. If convalescent institutional care is avaliable, however, it really should be used for most cases.

Dr. Mills. New York.

DR. ROGERS. Our experience has been entirely with convalescent care. I am curious to know whether data are available with regard to the control of upper-respiratory infections in the home and the foster-home environment. Foster homes with children might be more dangerous in that respect than institutions, in which, I think, we are learning how to control streptococcal infections.

DR. MILLS. Does anyone have any actual data on this point?

DR. MCCULLOCH. We have no recent data, but about 15 years ago Dr. Jones and I published a paper on the recurrence of infection in children who went home after having been in a convalescent home.[1] The rate of recurrence was much higher than that of children cared for in their own homes.

DR. WALSH. Miss Bartlett could speak on experiences in the Children's Mission in Boston. I think the question can't be answered satisfactorily unless you know, for each method of care, the precautions taken, the number of visitors, the kind of home, and so on. I think you can't say that any one type of care is actually superior to any other type until you know exactly with whom and with what you are dealing

DR. MILLS. Oklahoma.

DR. HALL. We have a few patients under home care. But most of our patients are sent to the convalescent home after they are released from the hospital. We feel that we get much better results from the treatment and the education provided our patients in the convalescent home—education not only in school subjects but also in taking care of themselves. As a matter of fact we insist, if we have a bed, that the patient go to the convalescent home rather than to his own home, because so many of our children are indigent, their home surroundings are very poor, and many of their parents have so many responsibilities that they just are not able to give them the proper care.

DR. MILLS. Rhode Island.

DR. CORRIGAN. We believe there are advantages and disadvantages in home care, foster-home care, and convalescent care. Any type of care may work out advantageously for some families, disadvantageously for others.

DR. MILLS. Utah.

DR. EUGENE SMITH. It has been our experience that results in our convalescent home are much better than those we get in homes in which the care is not adequate. This is especially true in families in the lower-income groups.

DR. MILLS. Virginia.

DR. GALVIN. We have had no experience with the use of foster homes during active infection, but we certainly prefer the convalescent home to the private home.

DR. MILLS. Connecticut.

MISS TOLAND. At present we have no foster homes at all. We used to have a very well-worked-out plan of foster-home placement in connection with one of our convalescent homes, but at present this is no longer available. One hospital has a convalescent ward in which the patients are kept after their acute phase has passed, up to 9 months or a year, but this is limited to patients in one city. Originally we have preferred convalescent-home care to care in the child's own home, when possible. As our convalescent-home program is now limited, we are attempting to increase the number of beds by urging the reopening of one convalescent home and the increasing of the number of beds provided in another.

DR. MILLS. Iowa.

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[1] Hugh McCulloch, M. D., and Edith Irvine-Jones: The role of infection in rheumatic children, Am. J. Dis. Child. **37**: 252. 1929.

DR. JACKSON. I think we all recognize that it is an individual problem. One can have inadequate sanatorial care as well as inadequate home care or foster-home care. One thing that must be remembered is the problem of the readjustment of the child to his own home after he has had a period in a foster home—one State just reported having such excellent results with foster-home care over the period of a year or a year and a half but I shall be eager to know what they will feel about it in 5 years.

We generally recommend sanatorial care. I would place it first, good sanatorial care; then foster-home care; but some children do not do as well in a sanatorium as they do in a foster home.

DR. MILLS. Washington.

DR. FISCHER. We have used both. In our opinion, the convalescent home by and large is far superior. We have, however, had some children who lacked the ability to live with a group and who were definitely a disturbing influence to the other children. These children were moved to foster homes.

DR. MILLS. California.

DR. JOHNSON. Fortunately, we have the use of a children's hospital in our territory that gives care to patients in both the acute and the chronic stages. We also have a few beds in three convalescent homes and one foster home. We have found that it is certainly preferable for most children to be in the hospital in the acute stage and either continue in the hospital or be in a convalescent home during the convalescent period. We have taken care of many children in their own homes during the entire course of the disease but we have found that we do not get the cooperation of the children nearly so well in their own homes as we do in the hospital or convalescent home. Consequently, we have tried to give each child a period of hospitalization, even if it is only 2 or 3 weeks or a month, in order to accustom him to bed care. We find that there is better cooperation from the child and his mother in his own home afterward.

DR. MILLS. I believe we may say the consensus is, in general, that care during the active stage might best be given in a convalescent home or hospital, but that all of us have found it desirable to care for some children in their own homes or foster homes. This brings up the next problem—providing diversional activities and schooling for those children who are at home and in foster homes.

MISS TOLAND. May I quote from a paper, written by a medical-social worker in the Connecticut State Health Department on the treatment of children with rheumatic heart disease? [2] "In order that the social worker may assist the physician in determining whether a child with rheumatic heart disease or conditions leading to this disease should remain in his own home during the acute or chronic phases of his illness, evaluation of the social situation in relation to his physical condition is essential. The worker's social study should bring out the following points:

"1. Is the home such that the child can be assured of adequate housing? Can he have a room which is light and airy for his long-continued bed rest?

"2. Is the economic status of the family adequate to meet the costs of a long-continued and recurrent illness?

"3. What is the intelligence of the family and is it going to carry out the instructions of the doctors and the public-health nurses?

"4. What is the intelligence of the child and how is he going to respond to a restricted regime?

"5. Are there any harmful emotional influences within the family, such as overanxiety of parents about patient's condition, family friction or discord?

[2] Ellen E. Ogren: Social factors in the treatment of children with rheumatic heart disease. Connecticut State Health Bulletin (August) 1941.

"6. How resourceful is the family and are there ways of improving the home situation?

"7 What is the state of health of other members of the family and are their needs being met?

"8. What organized community resources are available for the child's care, and if there are none, what groups or individuals can be of assistance?"

DR. MILLS. Are there other comments on this subject before we leave it?

DR. GIBSON. May I say just one word on home care? In a few instances, even when hospital care is available, all of us who are familiar with rheumatic fever have had the experience of having in the hospital what we call "perpetual rheumatics." They never seem to conquer their active infection. They are quite ill, nodules appear, carditis, marked enlargement of the heart, some signs of heart failure; they are in the hospital 6 months, 9 months, or a year without ever recovering. Occasionally I think those children are better off at home, if one can be sure of the home and sure of the sort of care they are going to get. After all, perhaps the parents are entitled to the companionship of that child during the little bit of life he has left, and the child, too, is entitled to the affection and care that his parents are able to give him, if they are intelligent parents. So in some cases, although we have good hospital facilities, we have deliberately sent these children home, telling the parents the child is still very ill, that he is not convalescent, that the outlook is none too bright. We have the visiting nurse see the patient; if someone in the clinic group can drop in to see the child, he does so; if it is nice weather and the family has a car, the child is brought to the clinic and checked there. Surprisingly enough, quite a few patients who have made no progress in the hospital have picked up at home and have gone on fairly comfortably for a number of years. I think that in certain selected cases that is a thing we can all afford to keep in mind; the child's mental attitude does something for his rheumatic heart disease.

DR. MILLS. Any further comment on this topic?

DR. MARTIN. The visiting nursing service in New York City, through the Henry Street Nursing Association, has just started a new type of service that may be of considerable use in the home care of the child. The nurses have been instructed to take the micro sedimentation rate in the home. This serves two purposes: First, it gives the physician information as to the patient's progress; and second, it saves a trip to the hospital, which in many cases might be harmful.

DR. MILLS. Other comments?

DELEGATE. I wonder how much we can get the parents and the child to participate in making a choice as to what type of care they would prefer having, so we can win their cooperation. For instance, one child who had had a number of hospitalizations was about to be yanked off to a hospital again and was told very frankly that she had to go because she made it hard for her mother to give her the care at home and there was nothing else to do. When this child saw that she could stay at home if she would help in the matter, she became quite a different patient. Similarly, there are parents who could be helped to care for their children if we could get rid of the attitude we sometimes are guilty of that since they haven't much money, they can't have much intelligence, and therefore it is best to remove the children. Perhaps with help to the parents and the children, some children, particularly those who don't fit into the group life of an institution, might be able to stay in their own homes.

DELEGATE. May I ask whether any particular problems arise when a child comes home from a long period of either hospitalization or convalescent care in making the adjustment back into the family? I wonder if that is of concern in connection with this question of the place to take care of the child.

DR. MILLS. Would anyone care to comment on that now, or will that fall more naturally in the section on follow-up care? I believe it will. Let us go on, then, to the diversional activities and schooling provided in homes and in foster homes. I shall ask Dr. Spekter of Connecticut to speak to us on this subject.

How Are Diversional Activities and Schooling Provided for the Home-Bound Child?

DR. SPEKTER. There are neglected phases of all programs in our State. Our social workers spend a great deal of time trying to arrange the schooling that is needed. They go directly to the local board of education and try to teach its members the needs of chronically ill children. In general, local boards have been very receptive, except that they frequently say, "We don't have any funds in the budget," so it is our job to interest local agencies to provide a fund for this purpose. The second problem is that often the school had no teachers to do this work. Then the unmet needs are brought to the attention of the State department of education, which has asked us to bring this information continuously to it. During the past 5 years we have supplied a great deal of ammunition to the State board of education. A bill was recently drawn up and passed by the legislature to provide funds for the education of the physically handicapped. So I think in the near future we shall have, through this law, both a program and the money to implement it. This law provides funds to local school districts over and above the amount that has been allowed for children in regular classes. Unfortunately, it excludes children handicapped by defective hearing.

Another method for providing diversional activities is through local crippled children's groups. That work is really done on a local basis and is far from being State-wide. We have had to enlist the help of volunteers and untrained personnel to some extent.

DR. MILLS. Thank you, Dr. Spekter. Would Mrs. Rohret, of Iowa, care to comment on this topic?

MRS. ROHRET. In Iowa we have a school in the Children's Hospital. When the child is able to do school work, he is either taken to the classroom or he receives bedside teaching in the hospital. When he goes home, he may have a visiting teacher provided by the local school. We are having difficulty in getting visiting teachers, however, because of the scarcity of teachers.

Transportation for the handicapped to and from school is provided by local school boards if the child is able to attend school.

Frequently the "teachaphone" is provided.[3] This is a radio-like instrument that is set up in the classroom and connects with the child's room. He may attend a class right from his bed. He may ask questions and answer those asked by the teacher. This system is set up by the local telephone company and the cost is paid for by the local school board. The instrument is either lent to the school by the State department of public instruction or the school may buy it outright.

DR. MILLS. That is an interesting solution of the problem. Would Miss Hall, of Maine, tell us about the provisions in that State for schooling of the home-bound?

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[3] W. A. WinterStein: School by telephone; the electrical two-way teaching device for crippled children in Iowa, The Child **5**: 250 (April) 1941.

Miss Zoe Hall. Outside of the City of Portland we have no public-school provision for home teaching, but in other sections of the State we have referred cases to the Society for Crippled Children and have been able to make home-tutoring plans for the children who have to remain at home. Usually our public-health nurse does quite a bit of work in the community in trying to arrange for a tutor, working with local schools and getting in touch with retired teachers. Then we work out a plan of payment with the Society for Crippled Children. This has worked fairly well, but at present we are running up against a shortage of teachers.

Dr. Mills. Most of our comments have been on schooling in the home. I wonder if any State or person has a particularly good program for the provision of diversional activities in the home. I recall yesterday it was brought out that it is hard enough to divert and absorb the energy and activity of a child in the hospital or in a convalescent home, and it must be doubly hard to do so in his own home. Does anyone have any comment on that particular subject? Perhaps clubs for the home-bound or the use of lay organizations and people?

Mr. Turner. I represent the National Society for Crippled Children. I have just heard some of our affiliate organizations mentioned by delegates from Connecticut and Maine. Diversional activities have been provided for many years by many of our State organizations and their local units I used to work in Wisconsin, and I have in mind particularly one program that seemed to work very well in Kenosha. Quite a few cardiac cases were handled there. The program was not carried out from the viewpoint of economics, that is, producing craft work for sale, but rather for the purpose of solving home problems and keeping children satisfied in bed. The work was done in collaboration with the local medical society, which appointed a medical advisory committee to see that nothing was done that would injure the child. Our unit there made use of whatever facilities there were in the community. Any academic teaching, of course, was done in collaboration with the State educational department and the local board of education. Our program for the most part provided diversional types of work and games. Clubs were encouraged, a little publication was gotten out, and the children corresponded with one another. Not only cardiac children but also the orthopedically handicapped were involved, and at one time there were as many as 125 cases on the active roll. These were called on not only by full-time workers and supervisors, but by a vast number of volunteers. This is just one instance of what can be done with the use of volunteer helpers and contributed funds.

Dr. Walsh. Here in Washington, through the auspices of the Washington Heart Association, which is a branch of the American Heart Association, we have a so-called in-bed club, in which all children who have rheumatic fever are registered. I believe the idea for the in-bed club started with Miss Terry, the children's social worker in Massachusetts General Hospital. The club has a monthly magazine, which is supported by the Junior League. One of the members of the Junior League serves as the editor. The children are encouraged to write to her and then see themselves in print; they correspond with one another. In peacetime, Junior League volunteers go to the homes of children who are sick in bed and read to them. They are not trained, however.

Dr. Taussig. I think we all agree that diversional activity in the home is a very difficult problem to solve. We in Baltimore, too, have a stay-in-bed club, adapted from the Boston regime, which we find helpful. In addition, recently, not in our State program, but in the hospital program at the cardiac clinic of the Harriet Lane Home, we have started having a toy library, and the children who come to the clinic register and take out a toy on one visit and bring it back

on the next. A great many children tire of toys after a little while and a toy library is a very economical way of providing a variety of toys. It is a fairly simple thing to run. I think the State programs could well consider having toy libraries from which the children could borrow games and occupational materials.

DR. ELIOT. My interest in this program for the care of children with rheumatic fever goes back nearly 30 years. The problem with which I was confronted 30 years ago was exactly the problem you are talking about at this moment. It was the reason I was hired to do a job in connection with a group of children with rheumatic heart disease. I had nothing to go on at that time; I had to use my imagination as to what could be done with children who are at home in bed with rheumatic fever or with the cardiac complications. So everything you are saying here rings many bells in my memory.

I have several questions to ask, questions I have no answers to myself. In the first place, who is the chief person responsible for seeing that mothers at home get the proper help and suggestions as to what they should do for their own children when they are ill at home? Is it the public-health nurse? What contribution does the medical-social worker make? What contribution does the doctor make? I should like to ask whether any of the States have developed materials for the use of public-health nurses or other workers who are going into the home.

Many mothers need help in handling this problem. Have we fallen down on our job here in Washington with respect to the preparation of materials that would be useful to the public-health nurse in Utah or Virginia or Massachusetts or in any one of the other States? Should we be preparing something that she can leave with a mother? I don't hold any brief for the Children's Bureau's doing it. The States might do it. Maybe they have, and the material has never come to my attention. I should like very much to discuss this from the point of view of what can be done to reach our 20,000 public-health nurses in the country with something that will be suggestive to them. I know the education group has done a great deal by having teachers help the mothers, but the person who is always going into the home is the key person to initiate the program. I suspect this key person is the public-health nurse, because she is going into the home all the time, seeing the child.

Back 30 years ago if there had been a public-health nurse we could have called on in each area of metropolitan Boston where I was working, I should have been glad to have been able to get hold of her. None were then doing the kind of thing public-health nurses do today.

MISS JORDAN. I was interested in what Dr. Eliot was saying. I wish something might be done to make those in the department of education feel the need of teachers trained in the teaching of these particular children. Not every teacher is equal to the situation by any means, and a great many of them are not really interested in it. If you get teachers from an ordinary department of education, they often simply come in and teach and go out. There is no real understanding of the child and his problem behind their teaching.

In our convalescent group we are trying to teach the child's own curriculum to him. In other words, we get an exchange of books from his home school with a letter from his principal and his teacher, which tells us where he should be and what he would probably accomplish by the end of that year if he were in the public school. That is quite a hardship on the teachers doing the teaching in the sanatorium, but nevertheless it gives the child a much greater sense of accomplishment if he can go back to his home school and fit in with his own

friends, who are going, say, from the third to the fourth grade. It is important to find teachers who want to teach these children and who understand that they should teach not just a third-grade curriculum, for instance, but rather the individual child's own third-grade curriculum.

DR. MCCULLOCH. I believe two guiding principles should be observed in providing this type of care. One is the principle of trying to live from the actual resources in the home and neighborhood, utilizing as much as we can what is available in the child's own environment. I have a strong feeling that unless we stay within those limits we are likely to introduce a lot of foreign material into the child's existence that may not be of much value later on, and may even produce some disturbing influences. Resources within the child's environment are usually abundant if they are looked for sufficiently.

As to the second principle, a word of caution from the pediatric point of view—don't do too much for these children from the adult standpoint. We provide many things that we think these children ought to have, not always what they really need.

DR. GALVIN. In Virginia a supplement to the physician's referral slip is sent to the visiting nurse or to the county nurse; this has a list of suggested diversional activities. It is used to stimulate the nurse to guide the mother and the child in planning diversional activities.

DR. MILLS. I think, since we are on the subject of schooling and education, it would be wise for us to continue on it. I shall therefore call on Dr. George Wheatley, of the Metropolitan Life Insurance Co., to speak to us about the schooling of these children.

DR. WHEATLEY. I should like to express my appreciation for being invited to come to this conference, which I think many of you, in fact probably all of you, realize is a very significant event. Dr. Eliot pointed out yesterday that it is the first time such a national conference has been held and I know that we all hope it is only the beginning of something that can be continued. I think it is terribly important at this time to keep the gains that have been made and not to regress in the programs that have already been established, even though under wartime conditions it may be difficult to make further progress at the moment.

Before I get to the question Dr. Mills has asked me to discuss, I should like to second Dr. Eliot's remarks about the importance of diversional activities. It seems to me that the public-health nurse does face a real challenge in her visits to the home, and from what I know of the activities of some of the State programs, much thought has been given to that challenge. We in the Metropolitan Life Insurance Company have become interested in the subject through our own visiting-nurse service and through our contacts with visiting-nurse services throughout the country, and I can tell you that information as to resources and practical suggestions for diversional activity would be welcomed by public-health nurses.

FOLLOW-UP CARE

Correlation of Health and Education

DR. WHEATLEY. One of the questions I am going to discuss is: What part should the school take in the health supervision of these children? I am going to limit my remarks to those children who no longer have active rheumatic infection. What I wish to say is based on the Astoria study of the school-

health program in New York City, which was carried on between 1937 and 1940 when I was connected with the New York City health department.[1]

First of all, we found that in many instances records kept of children with rheumatic fever or rheumatic heart disease were very poor. For example, in some cases we found no medical record at all; in others there was no indication of when the child first developed the disease; in others the school's information about the case apparently was several years behind the child's current condition.

Another thing we found was that these children had had a tremendous amount of medical and nursing service. For example, we took a sampling of about 150 cases and found that all these children had been examined by the school physician. In addition, some children had had three or four examinations by private physicians in 2 years' time, and other children had reports from cardiac clinics. About a third of the group had been examined by the school or clinic and the private practitioner. In addition to the time given by physicians, seven contacts per child had been made by the school nurse. That will give you some idea of the amount of service rendered to this particular group.

Now let's examine the reports of that service. The reports from the clinic and private physicians showed disagreement in diagnoses and gaps in follow-up service. In three-quarters of the cases studied, the reports failed to state when a return appointment should be made. In half the cases, either the reports contained no recommendations, the recommendations were not clear, or they were impossible to carry out in school. In half the reports, the diagnoses were incomplete. Altogether in this group we found only two reports that were considered adequate.

Another important finding in this study was the fact that the teachers often were unaware of the needs of these particular children in spite of the service that had been rendered. It was found that the teachers did not know the true status of the heart condition of about a third of these children and that the recommendations were not being carried out in about two-thirds of the cases. In some cases children were being limited in their activity who should not have been, and vice versa.

Home visits on these special cases brought out the fact that some of the parents were not convinced that a cardiac condition existed, that many did not understand the clinic's recommendations, and that half of them were not following the recommendations as to exercise. Of course, language difficulties and supervision of the child by persons other than parents undoubtedly contributed to this lack of understanding in the home.

I should like to summarize the findings with respect to children with rheumatic heart disease who are not in special classes. First, conflicts in diagnosis; second, inadequate reports and records; third, inadequate instruction to the family; fourth, lack of guidance and interpretation to the teacher; and fifth, lack of up-to-date knowledge about rheumatic fever among the school personnel.

An effort was made to improve this situation at the time and improvements are being made constantly. I hope that Dr. Rutstein, deputy commissioner of health of New York City, who is here, may supplement some of these statements that I make. The disagreements in diagnosis that brought so much conflict in their wake led to an early recommendation that the cardiac diagnostic service of the health department be enlarged both in size and scope. For many years the health department had a cardiologist who reviewed certain cases among

[1] Dorothy B. Nyswander: *Solving School Health Problems,* The Commonwealth Fund, New York, 1942.

school children and also served as a referee in the cases of children who were examined for working papers, but it was quite evident that this one cardiologist couldn't begin to meet the needs in the five boroughs of New York City. In 1940, therefore, five cardiologists, most of them with pediatric training, were installed in the five boroughs.

Then new procedures were developed to notify parents and private physicians. I won't go into detail, since much of this information is in the report of the Astoria study, but new forms were developed to be used in notifying parents and private physicians.

Great emphasis was put on the school physician's instructions to the nurse. The school physician, when he received reports from clinics, was expected to interpret the findings to the nurse—previously, the nurse had received reports and filed them without always knowing the significance of the diagnosis or recommendations. It is very important that the nurse have this knowledge, because we have put great stress on having the nurse visit the classroom teacher to interpret to the teacher the status of the child.

Provision of continuous medical supervision is the crux of the whole matter of caring for children with rheumatic fever or rheumatic heart disease. The school nurse is just as much concerned in knowing when a return visit to physician or clinic is scheduled as she is in the report of any change in the child's condition. The improved form for referring children to a private physician has aided in keeping children under care.

More important, however, than these devices is the procedure by which the nurse, together with the principal and teacher, keeps the cardiac children under surveillance with the aid of information and interpretation given by the school physician. The nurse confers with the principal each term to acquaint him with the status of each cardiac pupil. This conference not only keeps the principal up to date concerning these children but enlists his aid in helping to keep them under medical supervision.

A special health record, called a pupil-health card, was developed for every child in the school system, and I mention it now to show how it is used in connection with children with rheumatic heart disease. The pupil-health card is a means of conveying to the teacher up-to-date information about any child in her class. As reports come to the nurse, an interpretation for the teacher, based on the school physician's recommendation, is written on this card, and when the nurse has her periodical conference with the classroom teacher, the child's status is discussed. This is an excellent opportunity for the nurse to acquaint the teacher with the importance of protecting the child as much as possible from exposure to upper respiratory infection, to familiarize her with the early signs of rheumatic symptoms, and to give her general information about heart disease in children. It seems to me that if we are really going to make the school realize its potentialities as a supervising agency for children who have had rheumatic fever, we must reach into the classroom. We shall also have to work out methods so that the nurse and the teacher will be able to find new cases.

Special Cardiac Classes in New York City

I should like now to mention the high spots of a study of special cardiac classes conducted by the board of education of New York City.[2] The problem

[2] Board of Education of the City of New York: *Cardiac Classes and the Care of Cardiac Children,* New York, N. Y.

of the special class exists in urban communities in which the school population is large enough to make this administrative device practicable for the educator.

Certain conclusions were drawn from this study of special classes. The assignments of cardiac children to special classes were not based upon adequate diagnoses; procedure and management of the cardiac classes have not been suitable; teachers have had inadequate training for the management of such classes; physical arrangements for rest periods have been poor; it was impossible to care for children in segregated classes on a short-term basis because of the administrative difficulties involved in admission and discharge.

There was lack of attention to the actual educational and vocational needs of cardiac children; the number of home teachers was inadequate; teachers, when they had acute infections, were unable to stay at home and therefore exposed children in special classes to respiratory disease.

The study recommended that because of the nature and scope of the problem involved—the supervision of an estimated 7,000 children with rheumatic fever and rheumatic heart disease in New York City—a single special agency should be organized, having authority in both the medical and educational aspects of the program for cardiac children. This agency should have responsibility delegated to it both from the department of health and the board of education.

Since the study, new procedures have been developed for special classes. In the New York City health department there is now an agency responsible for placing children in special classes. More flexibility has developed in the educational program for children who have had rheumatic fever. The school physician and the private physician now have more resources available in returning children to school. Formerly it was necessary either to put the child in a special class or practically to keep him out of school. Now, depending upon the attending physician's recommendations, a child may be given home instruction, may be placed in a special class, or may be allowed to attend regular classes with modified activity. The latter procedure—attending a regular class with modified activity—is a tremendous step forward in a city the size of New York with about a thousand school buildings. This modified activity may mean omitting gymnasium work, requiring the children to attend school only half a day, eliminating the need for these children to carry books back and forth to school by having an extra set of books at their disposal or providing them with elevators in the school building and with bus service to and from school when such service is available.

Dr. Mills. I should like to call on Dr. Martens of the Office of Education for a brief comment.

Dr. Martens. I want to say first of all how helpful the conference has been to me. I am an educator and I believe educators should know much more about the physical needs of children. As the last speaker has emphasized, I think we need to stress the fact in all our local and State school systems that teachers should be familiar with the physical condition of the children with whom they have to deal. Fortunately, there are State school systems and there are local school systems in which this is true to an increasing degree. There are educators in this room from Wisconsin and Michigan and Illinois—and probably from other States—who could tell you of some of the things that are going on in those States with reference to the education of teachers and the education of handicapped children in the classroom, in the home, and in the institution. The United States Office of Education is committed to the principle that every child must have the type of education that is suited to his particular need, in whatever environmental situation he may be. I am happy to say that more and more States and more and more local school systems are becoming committed to that same realistic principle. I should like to mention four principles that, as I see it, are

fundamental to our whole progress in this program. They have all been mentioned before in one connection or other, so my reference to them is only an added emphasis.

First, we must have knowledge of one another's work, a coordination, if you please, of the work of the medical man, of the social worker, of the nurse, of the teacher, and of the parents in the home—each one understanding what the other is doing with reference to a particular child and each one ready to observe the other's instructions or suggestions in his specialized field.

Second is the need of coordinating the child's program, whether it be during his hospitalization or during his convalescent care at home or in a foster home, with his own school program. I mean the school program from which he comes—someone mentioned that this morning—not just *a* third-grade curriculum, or *a* fourth-grade curriculum, but *the* curriculum that will make it possible for him to return to his home school and go right along with his fellow pupils. Teachers need to be trained for that task and I have no solution for the problem of where we are going to get teachers in these wartime days. It is a State-wide and a Nation-wide tragedy that so many of our teachers are leaving the schoolroom for one reason or another. For the time being, we must probably continue to draw from the ranks of retired teachers who are interested and eager to serve in the classroom. We can also draw on volunteer workers.

Third is a need of recognizing the fact that we have a number of supporting agencies in the communities and States. The National Congress of Parents and Teachers is deeply interested in all types of problems of children needing special care. I know that many parent-teacher groups in local communities will help to get the program across if we will approach them. Someone mentioned a specific instance of this yesterday. A parent-teacher group obtained a teacher when the local board of education seemed not to be understanding the problem. There are also State and local societies for crippled children that include consideration of cardiac cases in their programs. There are State commissions for exceptional children operating under the Governor's appointment. There are State departments of education in charge of whole programs of special education. And there are the State colleges and universities training teachers of exceptional children.

The fourth item I should like to mention is the need of crystallizing the whole program through proper legislative measures. We get our State statutes through the cooperation of all interested groups. I refer to the type of action that the delegate from Connecticut has told you about this morning and that other States too have taken. By such means we can get a type of educational program for the rheumatic-fever patient that has never been known before, with a State-wide and Nation-wide concern for equipping these children to serve in effective capacities.

DR. MILLS. Are there other comments?

DR. STEVENSON. I think Dr. Eliot has thrown to us a distinct challenge on the diversional end of this work. What does it mean to the family and what does it mean to the child? It is in that realm that some of the decisions concerning treatment have to be made—for instance, the decision as to foster-home or convalescent-home placement.

One national health association is attempting to discover what prejudices, anxieties, fears, defenses, and antagonisms appear as part of the picture of the person confronted with the possibility that he may have a serious illness. I think these emotional factors are important in rheumatic fever, too, and that if they could be clarified along with environmental factors, it would be immensely valuable.

DR. MILLS. No other comments? We shall then take a short recess.

[Short recess.]

DR. MILLS. The next two topics on the program are on the general subject of follow-up care. The items are: When a child is sick between clinic sessions, how is this handled? To what extent do the local physicians participate in the follow-up care of children? I feel these topics are closely related and that we can discuss them both at once. Dr. Dwan of Minnesota, will you give us some ideas on this subject?

Care Between Clinic Sessions—Role of the Local Physician

DR. DWAN. As to function of the local physician and his participation in the follow-up care of the children, I feel that we must rely on the physician in the rural community. I keep stressing this point because some of the groups here don't have the same problem that we have in the larger States where the children we care for come all the way from 50 to 500 miles. In the northern part of our State, there is no way in the world I can follow up on intercurrent infections or on the direct handling of a patient after he leaves me. The best I can do is to tell the private physician who referred the patient about the course and progress of the child's disease and about how we feel the child's return to normal life and activity should be managed. At the time of discharge I always tell the physician that we stand by to give further aid whenever we are called upon to do so, and if the child develops any evidence of recurrence or if something unexpected comes up, the physician may write us for our opinion or advice. The problem, of course, is different in different States, but I have given my opinion as to our local problem.

DR. MILLS. Dr. Jackson of Iowa, would you speak on this topic?

DR. JACKSON: It is desirable and necessary to work closely with the local physician. In our State, when the child goes back to his home, he is placed under the immediate supervision of his home physician, to whom a detailed report is always sent. We carefully instruct the families that if the child develops a respiratory infection, he is to be put to bed immediately and the family physician is to be consulted. If the child has a sore throat, or if some other member of the family has a sore throat, we urge the physician to use sulfanilamide therapy. If, in the opinion of the physician, the child has any evidence of a recurrence, he can be returned to the hospital at once. We have had practically no recurrences in our group, however. We have a State transportation system that can bring the child back to the central hospital from as far as 250 to 300 miles, usually within a period of 24 to 36 hours.

DR. MILLS. Are there any other comments?

DR. FEINBERG. I should like to ask this question. Are these patients in various sections of the State part of the State rheumatic-fever program; and if they are part of the State program, shouldn't they be provided with medical care when they need it, even though the State is fairly large? Why is it not possible to delegate a physician in each section of the State to take care of the interim illnesses between clinic visits?

DR. MILLS. I presume in the event the child has a family physician you would delegate the family physician to provide care?

DR. FEINBERG. Preferably, yes, but if there is no family physician, if the patient is indigent and subject to so-called relief, isn't it possible to contact some physician in the community and ask that physician if he would be willing to take care of patients within a radius of 25 or 50 miles, if the State program pays him? In

that way, these youngsters would be provided with medical care and in addition those doctors would then be obligated to report what they found to the clinic.

DR. MILLS. I should like to have some comments on that point. I should like also to add the question: Do any State programs pay family physicians or private physicians for these services? I am not speaking of the physicians on your regular staff now, but a physician who might have to provide services for an intercurrent infection or something of that nature.

DR. FEINBERG. I think we have provision in our program to pay for that type of service, but we haven't had the opportunity to use any private doctors as yet because of the fact that our clinics haven't extended services to children in those parts of the State where the program physicians can't give the needed medical care.

DR. MILLS. Would Dr. Hall, of Oklahoma, care to comment on this problem?

DR. HALL. We have had very little trouble with intercurrent infections because we keep very close track of our patients. We have a written report from the mother at very frequent intervals and if the patient isn't doing well, we usually know it and so we can take steps either to get him back into the hospital or to arrange for care with the county health unit. Of course, the children get colds and such things, and if the family has a private physician, we ask the parents to call him in. If the family does not have a private physician, and many of them do not, we consult the county health unit. A number of our county units can take care of the situation very nicely. Then they report back to us.

We have, like Iowa, a State transportation program, and although we do not have as many railroads as you have in the East, we have lots of good roads and people do not mind distances. Patients are brought by ambulance from distances of 200 or 300 miles without any apparent harm to them.

DR. MILLS. You might be interested in the situation in the two counties of California in which our program operates. The population of those counties has more than doubled in the last 2 years. Consequently, many people have never had a family physician there. There is serious shortage of physicians in those two counties—Vallejo is one of the main cities in one and Richmond with its shipyards in the other. We have, therefore, had to take much greater responsibility for all aspects of the care of these children than we might under other circumstances.

DR. HUSE. Dr. Feinberg has put his finger on a problem that is going to be increasingly difficult. As you know, most of the programs as they have started have been small in geographical area. The two exceptions are Oklahoma and Iowa. We are watching those two programs with a great deal of interest because in a small program you can rather easily provide all the necessary medical services, but when you have a State-wide program, with one center in the middle of the State, it is very difficult to do so. In Iowa there has been a general plan to try to develop local centers in which particular pains would be taken to work with the best-qualified doctor in the community in order that there might be a local physician on whom the State agency could depend for help. I don't think the problem has been met as yet. It might be brought up again tomorrow when we discuss expansion of the programs.

DR. MILLS. Are there other comments or ideas on this problem? We shall go on, then, to the next topic: What should the public-health nurse do about follow-up care? Should this be done by the State or local public-health nurse? I am going to ask Miss Brackett, of the Children's Bureau, to make a statement on this subject and also to lead the discussion about it. Perhaps, Miss Brackett, you can bring up at this time the question you brought up earlier about preparation for home care.

Role of the Public-Health Nurse

Miss Brackett. I should like to indicate my own feeling about the first question. It seems to me that the decision on that problem will have to be made in accordance with what is good public-health practice, and, as I understand it, good practice in public-health nursing means the development of local generalized nursing services in which one nurse is responsible for providing all types of public-health-nursing services in a given community. Thus it seems to me that the responsibility of the State agency in the rheumatic-fever program is to provide consultation service from a nurse or nurses on the State staff who have or will have had special preparation in pediatrics with particular emphasis on rheumatic fever.

Consultation service would be given to the local nurses, who in turn would be enabled to develop and improve their activities in the program, to improve their skills, and to broaden their understanding of the total problem of rheumatic fever.

I would gather from the way in which the question was phrased in the agenda that there is another opinion on the problem, and I think it would be very interesting to hear from any of the States that have developed public-health-nursing services to families in a local community from the State level. If this is being done, what are the advantages and what are the problems? There is a basic problem in administration, and a discussion from a different point of view from mine is in order. [No comment from the floor.]

We have all agreed, then, that the local nurse is the one to go to the family.

Dr. Eugene Smith. In our little set-up in Utah I have paid no attention to the nursing service. It works more or less automatically, not because of anything that I have done, but because of the organization of the public-health nurses in our community. I hardly know what they are doing except that they do everything we expect them to do. We have one public-health nurse who is especially qualified along this line and she looks after the clinic work and has general supervision of the nurses going out to the homes. Other nurses, too, are assigned to the clinics to learn about rheumatic fever. If a child is sick between clinic visits, the mother reports to the health office and the nurse immediately looks into the matter and notifies the doctor if there is need.

I think our children are getting all the nursing service they need. I am quite sure that the nursing service is very helpful, not only to the patient but also to the doctor.

Miss Brackett. How much of a problem is the "expensiveness" of the public-health-nursing service to this program? We had a hunch early in the program that it was probably going to take more nursing visits per case than were made in other services that are provided in public-health programs—for example, in a maternity service or communicable-disease-control service. Other services haven't required the same frequency of visits sometimes required in the rheumatic-fever program. Do representatives of the States wish to bring up anything on this subject? Can you get the quantity of nursing service today that is needed? Are other nursing agencies available or are there school nurses from whom some service might be obtained?

Delegate. I should like to know if it is customary to pay local nurses per visit or on some other basis? Do they have to be compensated for the extra work that is required?

Miss Brackett. Most of the visiting-nurse services in the country receive support from community-chest funds or other community funds. The approach that has been made to visiting-nurse services in areas where this program is in operation is to ask if they will contribute the nursing service for the follow-up of

these children. In view of the fact that they are a community-chest organization and that totally new funds are coming into the community through the rheumatic-fever program, for the protection of the health of that community, can they extend care to this group of children?

From the nursing angle adequate care of these children in the home involves seeing that the local nurse has a thorough understanding of each case, and that means seeing that she has adequate supervision. In the report of the Virginia services this morning I struggled to keep track of how many nurses were involved in that particular situation. The problem there has been to keep the services given by those nurses from overlapping too much. In a State like Connecticut our problem relates to a large number of private nursing agencies, as well as to official health agencies, to whom consultation should be given.

Dr. Wheatley. I should like to bring up the question as to whether the visiting-nurse association should be paid for services to children under this program. Isn't the same principle involved that Dr. Feinberg has brought out with respect to the local practitioner? I think the question ought to be given very serious consideration because, although the local visiting-nurse service does derive part of its income from the community chest, it also receives funds for services from individuals who can pay, and also from other organizations that pay for service. Of course, service is rendered without cost to those families who cannot afford to pay or have no other resource for payment.

Mrs. Wohlgemuth. We have found in our service—a county unit, not a State-wide program—that the local generalized nursing staff of the county health department has been able to care for this work. I think that administratively it is a question of how large a population each nurse must serve. In our county the proportion is 1 nurse to about 5,000 people. The cardiac child, of course, does require additional service, but as Dr. Taussig pointed out, the majority of our active cases are carried in convalescent homes or sanatoria—except for some of the Negro patients whom we can't get into institutions. After all, if you are rendering a generalized service, which is what we are attempting to do, it isn't always just the cardiac child that you are thinking about. Nursing service must be provided for other types of patients, too. Specialized services, of course, increase the administrative cost, and I don't know that such services are necessarily any better. We have found that we can carry the rheumatic-fever program with very little increase in our administrative costs.

Dr. Mills. Are there other comments?

Miss Brackett. Some regions have experience in getting participation from agencies other than official health departments. An example is the school health services. California and Washington have made arrangements with school services that might well be described.

Dr. Johnson. Richmond, one of the largest towns in our area, is a shipyard town, in which the population—23,000 in 1940—has more than quadrupled in the last 3 years and is now 93,700. This has brought about a serious problem in nursing follow-up since no new nurses have been added as the population has increased. There are some excellent school nurses, however, who have cooperated beautifully in making the home visits. They do not actually give bedside nursing care; they supervise the care the mother is giving, taking the temperature, noting the condition of the child, such as appetite, restlessness, irritability, presence of joint pains, and so on. Miss Helen M. Wolfe, our consultant public-health nurse, has obtained the cooperation of the school nurses. The nursing visits are not as frequent as we should like in some instances, and this is one of the reasons why it is difficult to take care of the acutely ill child in his home. Also, many of the homes are trailers or the new housing units that are built without proper

insulation so that it is impossible for a child to get rest at home even though the family unit itself may be small. The families around them may be very large and may add a great deal of noise and confusion.

DR. MILLS. Are there other comments on the problem of nursing care in the home?

DELEGATE. Has any State agency a formal arrangement with the school or with other agencies about nursing services? If so, just how are reports requested and how are they obtained?

MISS BRACKETT. I think Dr. Fischer, of the State of Washington, can tell us about that.

DR. FISCHER. Yes; we have an arrangement with the board of education, which employs school nurses in the city of Spokane. The Spokane city health department does not have very extensive public-health-nursing service so we in Spokane are dependent very largely on the school nurses with whom we have a very satisfactory arrangement. Their interest has been developed through a series of meetings. There are two gaps in the service, however. One is that the school nurses have a vacation of 3 months during the summer, during which time our rheumatic-fever patients are not visited; the other is that the school nurses do not give service to children after they leave school.

DR. MILLS. Another comment?

DR. CORRIGAN. In Cranston, R. I., which is a city bordering on the city of Providence, we have a similar arrangement with the school nurses. The school nurses take care of our rheumatic children during the whole year, except in summertime, when the local V. N. A. provides the service. The overage problem hasn't hit us yet.

DR. MILLS. We shall postpone any further discussion on this point until after we complete the next topic: What responsibility for follow-up social services should be taken by the State medical-social consultant or by the local social agencies? I am going to ask Miss Toland, of Connecticut, to speak first on this subject.

State and Local Responsibility for Follow-up Social Services

MISS TOLAND. Perhaps we should emphasize the fact that the medical-social consultant is but one member of the crippled children's staff who is interested in the care of the rheumatic child and that her role in relation to that of other members on the staff must be clarified. In Connecticut we have two methods through which cooperation can be worked out—discussion of individual cases and after-clinic conferences. It is thus possible for medical and social factors present in the situation to be discussed and an agreement reached as to the responsibility of the social worker or the public-health nurse for follow-up in each particular case.

We have no health district or county units in Connecticut; the State medical-social workers cover the entire State. In our program we utilize several approaches. One is consultation, a service that is given not only to our own staff members, such as public-health nurses, physiotherapists, doctors, and so on, but also to social agencies on the State or local level. Since we are without health districts, we have arranged for our workers to keep "office hours" in some of the hospitals in the outlying areas. This has facilitated the care of many of our patients and has been very helpful in strengthening relationships with local agencies.

Another approach is through cooperative services. We emphasize the use of all local social agencies, private and public, insofar as possible. We are finding

it increasingly difficult, however, to get services in some localities because of staff shortages or inexperience of staff members. In a good many instances, therefore, we are finding it necessary to continue a cooperative service over a long period of time. Although we are on a State level, we do find ourselves in the position of giving direct service. We do have a great many rural areas in Connecticut in which there are no social services available and we find it necessary for our own staff to give service.

With regard to education, we have found ourselves, as Dr. Spekter has already indicated, assuming the responsibility in planning for schooling, home tutoring, or special classes, according to the needs of the child. In one of our small cities a special home-tutoring program was developed through the participation of the local school committee, the superintendent of schools, the local health officer, and certain private agencies. Later, when the need of group activity for these children was recognized, arrangements were made on a private basis for having a center in which they could meet. I feel that this kind of community development offers a great deal of promise, and its promotion is a function of the crippled children's medical-social workers. With the passage of the Connecticut Bill No. 17 for the education of the physically handicapped child we are working closely in this field with the special-education director of the Connecticut State department of education.

DR. MILLS. Will Dr. Rogers or Miss Mosher comment on this subject?

MISS MOSHER. In New York State in the rural area the public-health nurse does all the follow-up on patients under the care of our cardiac service. The medical-social consultant acts as a liaison person between the members of the staff at the convalescent home and the local public-health nurse. Data obtained from the school teacher, from the occupational therapist, from the doctors, and from the nurses, are discussed in conference with the public-health nurse. She, in turn, brings to the conference information regarding the patient's family, so that joint plans can be worked out for any adjustment the nurse may need to make in the home before the patient is discharged.

Also through a survey of the county in order to become familiar with the social agencies that were available, it was possible to stimulate the public-health nurse to use these agencies when it seemed indicated. We also discussed with the public-health nurse the use of the central index (social-service exchange) in obtaining information from agencies listed as having had contact with families.

In planning for the cardiac patients, we tried to work out an activity program that could be used for any home-bound child. Through the 4–H clubs we found there were many projects using the facilities available in the home and in the community that could be worked out by the patient under the guidance of a leader. We also enlisted the aid of some of the older Boy and Girl Scouts to go into the homes and bring the interests of the Scout troops to children who were not able to get out to the meetings. While these children were in the convalescent home, they attended Scout meetings, had recreational activities and school work. It was hoped that the transition from the convalescent unit back into their own homes would be made easier if the public-health nurse were able to work out a plan to continue these activities.

DR. MILLS. Is there any further discussion?

DR. HALL. I should like to make just one comment. Oklahoma is a rural State with comparatively few social agencies. We do have child-welfare workers in the State and they are asked to aid in our planning very early in the game. When the child first comes to the hospital, we usually request a home study, and the child-welfare workers' assistance to carry through our planning when the child has returned to his own home. They can help arrange the diversional

activity that we have been discussing so much. It is a great point as far as we are concerned. We are anxious to get further help on it because in our rural areas these activities are very limited.

DR. MILLS. If there are no further comments on this topic, we shall go on. I should like to call on Mr. Amato of the Federal Office of Vocational Rehabilitation to make a short statement.

Vocational Rehabilitation of Rheumatic Children

MR. AMATO. As you know, the Congress passed a new rehabilitation act this past session, which was approved by the President on July 6.[3] It provides, in addition to vocational training, many services not formerly provided for by the act of 1920, including medical and surgical care; hospitalization; psychiatric, physical, and occupational therapy; diagnosis and treatment; and artificial appliances. I don't know how the problem of rheumatic fever ties in with the present plans for expanding this program. I think there should be a close tie-in between the vocational-rehabilitation program and any general services to patients afflicted with rheumatic fever. The economic problems of the physically handicapped, whether they suffer from rheumatic fever or other types of disability, have strong repercussions on the psychological and social life of the individual, and for that reason, planning for vocational training and occupational objectives would generally help to improve the psychological and physical recuperation of the individual.

I don't believe I have anything further to say on this program. I pointed out a moment ago that it is in the process of being implemented, and the methods and procedures we are now working out are still military secrets, so to speak.[4]

DR. MILLS. I think we all recognize the value of vocational rehabilitation for many of these children and I hope we shall attempt to obtain it for the rheumatic child as we would for our other crippled children. I should like to call on Dr. Spekter to tell us very briefly about the vocational-rehabilitation program in Connecticut.

DR. SPEKTER. The State department of education has developed a system whereby the prospective employee and employer get together at "preemployment clinics." At the clinics the results of previously made tests and evaluations of the abilities of the prospective employees are discussed. At one clinic 10 young crippled persons attended, 9 of whom were placed.

I believe for children vocational guidance is more important than vocational training. The department of education is emphasizing job placement at the present time but vocational guidance seems more important because so many of these children, when they reach the ages of 15, 16, and 17, find that they cannot do the type of work they had planned on for years.

DR. MILLS. We might have time for one more very brief comment.

DR. WALSH. I should like to say a word about special classes for children with rheumatic heart disease. I think there is very little need for these special classes. The emphasis should be on the return of the child with the disease to his normal class, possibly with some modification of the regular program. If there is need for a special class in a community with a large number of children with badly damaged hearts, then those children should be sent to that special class only on the recommendation of someone thoroughly trained in heart disease and rheu-

[3] Public Law 113—Seventy-eighth Congress, Chapter 190, First Session, H. R. 2536.

[4] Section on "Requirements and Recommendations for Physical Restoration Services" now available on request from the Office of Vocational Rehabilitation, Federal Security Agency, Washington 25, D. C.

matic fever. The stigma of placement in a special class often undoes any possible good that could come from such a class for cardiac children.

DR. MILLS. I should like to thank all of you for your participation in this discussion.

[The meeting was adjourned at 12:45 o'clock to reconvene at 2.]

WEDNESDAY, OCTOBER 6, 1943—AFTERNOON SESSION

PROPHYLACTIC USE OF SULFA DRUGS

DR. VAN HORN. This afternoon we are to hear a panel discussion of the prophylactic use of the sulfa drugs to prevent recurrences of rheumatic fever. A number of clinicians who are working in State programs requested that the present status of chemoprophylaxis be discussed at this conference. Consequently, we invited a group of experts who have done clinical research on the problem to give to the conference the benefit of their experience.

We want to have it understood that our sole wish in arranging this discussion is that you clinicians may have the opportunity to hear an expression of opinion from individuals who have been treating a number of patients with sulfonamide drugs. It is entirely up to you to make your own decisions as to the therapeutic measures you wish to use in the treatment of children who are under your care. In no instance does the Children's Bureau wish to take a stand regarding any specific therapeutic procedures to be used in the care and management of children with rheumatic fever.

I should like to introduce the members of the panel. I shall start at the extreme right and go around the table. Major William Button of the Army Medical Corps, who has done some work in New York with the use of the sulfa drugs; Dr. Caroline Thomas of Johns Hopkins University; Dr. Homer Swift of the Rockefeller Institute; Dr. Chandler, whose work was also done at Johns Hopkins; Dr. Hansen from Minneapolis; Dr. Katherine Dodge of New York City; Dr. Ann Kuttner, now of Boston, whose work in this field was done at Irvington House in New York; and Comdr. Alvin Coburn of New York. I shall now turn the meeting over to Dr. Homer Swift.

DR. SWIFT. As an introduction it would be well to present the current concept of the nature of rheumatic fever. It is fairly well established that most attacks of rheumatic fever are induced by preliminary infections with the group A hemolytic streptococci. This preliminary infection may be severe, like scarlet fever or septic sore throat, or so mild that it may be missed unless very careful bacteriological investigations are made. After this initial stage, or phase 1, there is a period one may call the latent stage, or phase 2. In the third phase following the latent period, the rheumatic-fever manifestations appear. The time we shall discuss this afternoon is essentially the period before the hemolytic streptococcal infection occurs. First, we shall ask each panel member to present very briefly his or her experience with chemoprophylaxis, starting with Commander Coburn.

Experience With Sulfa Prophylaxis

COMMANDER COBURN. Briefly, I haven't had any experience with chemoprophylaxis for the last 3 years. We did observe a small group of rheumatic children on prophylactic doses of sulfanilamide for a period of 3 years. I am sorry I can't

remember how many patients there were—I think 189. So far as we could tell, there was no typical attack of rheumatic fever and only one patient developed any symptoms that could have been classified as rheumatic. So far as could be determined by frequent throat cultures, these patients escaped hemolytic streptococcal infections, although untreated siblings did contract hemolytic streptococcal infections in their homes. Several of our patients contracted mixed infections, but not frank hemolytic streptococcal infections, and there was only one attack that might possibly have been rheumatic fever in the group. We followed those individuals after prophylaxis was stopped and found that they were just as susceptible as they had been in the past—they contracted streptococcal infections and developed the usual percentage of attacks of rheumatic fever. It looked as though chemoprophylaxis prevented streptococcal infections and thereby prevented rheumatic fever but did not modify the susceptibility of the host either to streptococcal infection or to the development of rheumatic fever.

Dr. Kuttner. I have had the opportunity of studying sulfanilamide in a convalescent home for rheumatic children. During 2 successive winters the 108 children in the institution were divided into 2 comparable groups matched as closely as possible in regard to age, sex, number of previous rheumatic attacks, and cardiac findings. One group received sulfanilamide; the other served as a control.

During the first winter 30 of the 54 children in the control group developed streptococcal upper respiratory infections. Of these 30, 15 developed rheumatic relapses following a latent period. In the sulfanilamide-treated group only 1 child developed streptococcal pharyngitis and she did not develop rheumatic sequelae.

During the second winter, the same procedure was followed. More children with marked organic heart disease were included in the study. The results obtained were similar to those of the previous year. Eighteen of the 50 children in the control group developed streptococcal infections and 9 of these developed rheumatic relapses. In contrast, only one child in the sulfanilamide group contracted streptococcal pharyngitis and after a latent period developed mild rheumatic symptoms. This child's blood level was less than 1 mgm. percent at the time that he contracted the streptococcal infection.

The percentage of toxic reactions we observed in these children was fairly high, about 10 to 12 percent. The most frequent reaction was fever and abdominal pain. These drugs were discontinued in children who got reactions, and other children were substituted for them in the study. We also saw rashes accompanied by leucocytes in two children. A few children developed leucopenia. At intervals these children were retested with the drug and similar symptoms developed. The drug was, therefore, permanently discontinued for these children.

Dr. Dodge. At the Bellevue Children's Cardiac Clinic in New York we have been using sulfa prophylaxis for the last 4 years. We have now treated 88 children with the drug for a total of 181 patient seasons, 7 of the children having had the drug for 4 years, 19 for 3 years, and the remaining for 1 or 2 years. The age range of these children was from 6 to 18, but 66 percent of them were 13 or younger. In general, they had had very severe rheumatic disease with histories in most cases of frequent previous attacks; almost two-thirds of them had mitral diastolic murmurs. During this same period a total of 101 children, observed for 138 patient seasons, was followed as a control group.

In the group treated with sulfanilamide, 6 children became active. Two were children who had recently been active and who became reactivated or developed signs of increasing activity within 2 weeks of starting the drug. Of the remain-

ing 4, 2 were definite relapses in children who, as far as we could tell, were taking the drug regularly and maintaining good levels. They were both very advanced cardiacs. Two other severe cardiacs, both adolescents, died of congestive failure without showing evidence of a streptococcal infection or of active rheumatic fever, although in both a post mortem showed microscopic evidence of active myocarditis.

During the same period, in the control group, there were 31 relapses, 19 of these definite major relapses and 12 possible relapses. Most of the latter were probably relapses, including one in a child who died of subacute bacterial endocarditis.

Dr. Hansen. Our experience has been obtained in the pediatric department of the University of Minnesota hospital. The procedures we have followed in our evaluation of sulfonamide therapy in rheumatic fever are no more difficult or complicated than those the average practicing physician would be able to employ in his private practice. We have obtained a clinical impression with regard to one thing, that is, the greatly improved well-being of a great number of these rheumatic children as compared with that which we used to see. Also, we do not see so many children suffering from cardiac decompensation in the critical state, in an oxygen tent, and under very expensive treatment over prolonged periods of time in our hospital. That is a clinical impression, but it is substantiated by our mortality statistics. To go over these very roughly: In 1938, we had 6 deaths from acute rheumatic fever with cardiac decompensation; in 1939, 9 deaths; and in 1940, 13 deaths, all in children of school age. During 1940, in this age group, only 18 other deaths occurred in our hospital, including all the pediatric diseases, leukemia, sepsis, appendicitis, and so forth. May I emphasize that the deaths from rheumatic fever were the result of active rheumatic infection and not mechanical heart failure, as is commonly seen in adult subjects. Since we have been using the sulfa compound in a rather large percentage of cases among our out-patients, we have had, in 1941, 1 death; in 1942, 3 deaths; and so far this year, 2 or 3. These deaths occurred in patients who had not received sulfa drugs prophylactically. If we can judge from our experience gained in this study, we might well believe that these children, too, could be living today, had they had the benefit of sulfa therapy.

I shall summarize very briefly our 5 years' experience with some 70 children in 131 patient seasons. We have had 7 recurrences of the disease in the 73 season cases in the treated group. For the sake of the statisticians we have included all the cases, but in the records of at least 4 of these it is stated that the patients were irregular in taking the drug. If these were excluded, the recurrence rate would be reduced considerably. In our control group of 58 patient seasons, 21 rheumatic recrudescences were observed.

Dr. Chandler. Working with Dr. Taussig in the Harriet Lane Cardiac Clinic, we carried a small group of patients over a period of 2 seasons on prophylactic sulfanilamide. The first year we had 16 in our group; the second year we added 9, giving us a total of 25 patients carried on the drug throughout those 2 seasons and giving us 41 patient seasons. In that group we encountered one questionable recurrence of rheumatic fever. I say "questionable" because that recurrence took place within 2 weeks after the administration of the drug. However, we included that in our report as a recurrence. In the control group, which likewise consisted of 25 patients carried over the same 2 seasons, giving a total of 41 patient seasons, we had 5 recurrences of rheumatic fever. Two of the recurrences vere very severe and 3 were mild.

So far as the toxic reactions are concerned, we encountered no serious difficulties. We withdrew the drug in two or three instances—twice because of rash

and once because of leucopenia. In the light of what some of the other people have found subsequently, we might not have withdrawn the drug from those children. We did discontinue the drug, however, in about three instances.

DR. SWIFT. Our next speaker, Dr. Thomas, has had the longest continuous experience, I think, in this field of any of us.

DR. THOMAS. Our experience has been in a small cardiac clinic open to adolescent and young adult rheumatic patients. We started in 1936 treating a group with prophylactic sulfanilamide, using quite a small dosage, 1 gram a day at first, and later, for purposes of convenience, 1.2 grams a day. The pills were in 5-grain tablets and we gave them two in the morning and two at night, because the noon dose was occasionally skipped by active young people away from home. We treated at least 25 of our patients for more than 3 years and all of them added together over this period of time made 114 patient seasons. In the total group 1 prophylactically treated patient developed chorea and 1 a brief monarticular arthritis. Otherwise there were no rheumatic recrudescences.

In the control series of 150 patient seasons 15 patients developed typical acute rheumatic episodes and 5 others questionable rheumatic episodes. Two developed other types of streptococcal infections and there were 4 deaths—2 from subacute bacterial endocarditis, 1 from chronic rheumatic heart disease with failure, and 1 from acute illness of unknown etiology.

We were impressed, as was Dr. Hansen, with the well-being of the patients on sulfanilamide, and contrary to earlier impressions, there has been no evidence of weight loss. I have had a number of other young private patients on this drug in the last few years, including one girl of 6½ years on the drug continuously for 30 out of 32 months. She is now 9. During that time she has gained 11½ pounds and has grown 5¾ inches, so the drug had no deleterious effect from the point of view of growth. She looks extremely well and has been better than she ever was during her first 6½ years of life, when she had a great deal of infection; otitis media, and rheumatic fever. We have had very few toxic reactions, none of them caused us much difficulty, and only two patients had to be dropped from the series. I believe that this may be due to the fact that our dosage was considerably smaller, especially in proportion to the size of the patient, than dosages used in other clinics.

MAJOR BUTTON. In our clinic in Roosevelt Hospital in New York we ran only a small series of patients—only 46. We gave them approximately the same dosage as Dr. Thomas has given, but we gave it to them in 3 divided doses. For some reason or other, we ran into many more toxic reactions, such as rashes and leucopenia. Possibly we stopped the drug upon noticing slight leucopenia when we could have carried it on. I don't know about that, but we had one experience that was very unfortunate and the patient died of agranulocytic angina. We thought we had taken all the precautions we could to cover such an exigency. We were getting blood counts twice a week at the time just before his death. He had been in on a Wednesday for a blood count; he came in with a sore throat and went rapidly down hill during that week end. His count had been perfectly normal on Wednesday.

Summary of Studies on the Use of Prophylactic Sulfanilamide in Rheumatic Fever*

[Adopted from Thomas, in Bulletin of New York Academy of Medicine, August 1942]

Author	Type of patient	Age of patient	Years of study	Daily dose of sulfanilamide grams	Treated group		Control group		Toxic effects
					Number of patient seasons	Number of recurrences	Number of patient seasons	Number of recurrences	
Thomas et al	Clinic	8–37	1936–1942	1.0–1.3	114	2	150	[1] 15	Few and mild.
Coburn and Moore	Convalescent home and clinic.	6–14	1936–1940	2.0–3.0	189	1	146	31	10 percent. None serious.
Stowell and Button	Clinic	11 (average)	1940–1941	1.5–2.0	46	1	14	[2] 2	One death.
Chandler and Taussig	do	6–16 (one of 20)	1939–1942	.6–1.7	41	1	41	5	Few and mild.
Kuttner and Reyersbach.	Convalescent home	7–15	1940–1942	1.0–2.0	108	0	104	14	14 percent. None serious.
Bellevue children's and adolescents' clinics.	Clinic	8–17	1939–1942	1.0–2.3	150	3	----	----	Mild; none sufficient to stop drug.
Hansen, Platou, and Dyan.	do	3–16	1938–1942	1.0–3.0	78	2	46	21	Few and mild.
Total			7-year period.		726	10 (1.4%)	501	88 (17.4%)	

* See page 69, for list of reading reference on this subject.

[1] Five others developed illnesses that might also have been rheumatic in origin.

[2] Two others developed questionable recurrences of rheumatic fever.

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DR. DODGE. I think I should say that in our experience with toxic reactions out of a total of 181 patient seasons, we have found it unnecessary to discontinue the drug permanently in a single child. We had a number, particularly the first 2 seasons, of drops in the total white count, and this worried us in 2 or 3 patients. We temporarily discontinued the drug in those cases. The lowest count was 12 percent granulocytes with a total of 4,000 leucocytes. With that boy we discontinued the drug for a week, and 2 weeks after discontinuing it we were able to start him in on it again in smaller doses. He has taken the drug for 4 years subsequently without any drop in his count. We had a few vague subjective complaints, 2 transient rashes. Otherwise we have had surprisingly little difficulty with toxic reactions in spite of the fact that we used the same dosage that most of the others have reported.

DR. SWIFT. The meeting is now open to general questions.

DELEGATE. Were any other of the sulfonamides used besides sulfanilamide?

DR. SWIFT. The discussion so far today has involved the use of sulfanilamide, except in a few instances. Dr. Hansen has recently used sulfadiazine, which will be discussed more fully later. Other questions?

DELEGATE. From the course of the discussion this afternoon I wondered about something to which I don't know the answer. In using a drug that must be given prophylactically over a long period of time, it would seem important to know the expected frequency of attacks. Does anyone know the actual frequency with which streptococcal infections take place, followed by rheumatic fever? Then, in individual cases, is there a variation in the frequency with which individuals have fresh infections followed by rheumatic fever, and is there any constancy in that cycle in an individual?

DR. SWIFT. May I be allowed to answer that? Although hemolytic-streptococcal infection nearly always precedes the attacks of rheumatic fever, there are many hemolytic-streptococcal infections that are not followed by such attacks. The course of events is so irregular that one cannot forecast what will happen. In our own experience we have followed a group of children for 2 to 3 years, making very frequent throat cultures, so that we knew many of the infections that occurred in that group. One patient had three different types of hemolytic-streptococcal infections but only after one of those did he develop a rheumatic relapse. That illustrates what may happen. We think now that perhaps 90 percent of the people who develop hemolytic-streptococcal infections do not develop rheumatic fever. Your question is very difficult to answer from the statistical point of view. To give the correct answer will require a great deal more study.

DELEGATE. I was wondering whether in given individuals there is any definite periodicity of attacks. I am thinking about administering the drug itself; if a patient had a cycle of recurrence of rheumatic fever every 2 or 3 years, the drug might not have to be given continuously but could be timed to meet the individual situation. Is there any evidence one way or the other about that?

DR. SWIFT. It seems to me that in most rheumatic children there is a decreased tendency to develop the recurrences at about the age of puberty. There is very good statistical evidence that the disease is much less frequent then. In childhood, however, the susceptibility probably changes every year.

DELEGATE. Quite irregularly, so that no prediction can be made?

DR. SWIFT. So irregularly that we have not enough data to answer your question.

To summarize, there is very convincing evidence that the prevention of streptococcal infections by the use of sulfa drugs results in a corresponding decrease in recurrences of rheumatic fever.

Dr. Huse. Am I right in understanding, Dr. Swift, that it is the consensus of this round table that sulfa drugs should be used in treating children with rheumatic fever under State public programs? The reason we wanted this discussed is because up to now the use of sulfa drugs in preventing rheumatic fever has been considered in the experimental stage. While the use of the drug is in the experimental stage, it would not be good policy to use it in a public program of medical care. The question is: Has the experimental stage now passed? Has it now been established that the use of sulfa drugs in preventing rheumatic-fever recrudescences is the method of choice?

Dr. Swift. I will ask the panel members to answer that by a show of hands. Those in the affirmative. [Six hands are raised.]

Major Button. I am afraid I don't exactly understand the question. The set-up of the State program would naturally affect my answer.

General Morgan. I think the question before us at the moment is a simple one. Is the use of the sulfa drugs now out of the experimental stage and do you recommend its universal application?

Dr. Hansen. I would recommend that sulfa prophylaxis be applied universally if a physician supervises the administration of the drug. It is like using insulin for diabetes or like almost any other type of therapy. The patient must be in the charge of a physician who will assume responsibility for his or her care.

Delegate. I wonder about that. The average physician has very few facilities by which to determine whether or not there is rheumatic activity in a patient. If you have a very good clinic set-up in which your patients can be checked constantly, I think that is one thing; but when the physician doesn't have facilities to determine activity, it may be harmful. I should think it would be necessary, if the program is set up, to make sure that facilities for the determination of activity are available before any kind of recommendation is made.

Dr. Hansen. I think the same thing holds true here as for anything else. A number of diabetic children are brought to the hospital in coma or even in shock, although it is well known that with proper handling these conditions could have been prevented. However, because of these temporary failures in the management of the disease, we do not question the over-all value of the use of insulin in the treatment of diabetes. So, also, in rheumatic fever we must do the best we can with the facilities available, and any practicing physician with an understanding of the various phases of rheumatic fever is able satisfactorily to control recrudescences by means such as this.

Dr. Swift. Are there questions?

Delegate. In view of the statement made about the blood count 3 days before death, would the group like to make some standard recommendation for the times advisable for blood counts? Should they be made while the patients are on sulfa drugs?

Dr. Swift. That question will probably be discussed later. May we postpone it until then, please? May we now have discussion on this question: Should a definite period of time have elapsed after rheumatic infection has subsided before the beginning of prophylaxis? Will Major Button start?

Interval Between Active Rheumatic Infection and Sulfa Prophylaxis

Major Button. I should think 6 weeks ought to elapse after laboratory confirmation of inactivity is obtained before you start sulfa prophylaxis. We had one recurrence in a child who received the drug about a month after the infec-

tion was clinically inactive; I think if we had given the child a few more weeks we wouldn't have run into that difficulty.

Dr. Thomas. We started 10 or 12 patients on their prophylactic doses before they left the hospital. Some of them had normal sedimentation rates; others did not. In other respects the rheumatic fever was entirely quiescent. No relapses occurred in that small group. We tried this procedure for two reasons. Patients convalescent from rheumatic fever are usually kept in institutions a fairly long time after the joint swelling and so on have disappeared. If they can be started on sulfonamide prophylaxis while they are still in the institution, there is an opportunity to carry out the laboratory examinations, blood counts, and so on and get them properly started. The other reason was that we had several patients who returned home without starting sulfanilamide and who, although they had normal throat cultures on discharge, came back to the cardiac clinic a week or two later with a large preponderance of hemolytic streptococci in their throat cultures, having apparently acquired them as soon as they returned home. It seemed reasonable to try to avoid this entrance of hemolytic streptococci into the flora of the throat, if possible.

Since we had such good results in a small group, I believe the drug could be started within a few weeks after a severe attack if the patient is still in an institution. I think no exact time can be set, but the drug might be started about 3 or 4 weeks after the patient has become normal.

Dr. Chandler. I agree pretty much with what Dr. Thomas has said. In our own group Dr. Taussig and I did not start our patients on the drug until they had shown no evidence of rheumatic activity for 3 months, by any criteria you want to choose. Perhaps we were a little overcautious in the light of later studies, Dr. Kuttner's and Dr. Dodge's particularly. We might have started our children a little sooner on the drug. I don't know, but, in general, I am inclined to agree with Dr. Thomas that the drug could be started when the patients are definitely on the down grade of activity and perhaps 3 to 4 to 6 weeks after the acute attack.

Dr. Hansen. We are agreed that we want all signs of activity of the infection to have disappeared, and usually we wait about 6 weeks to 2 months after the infection has become inactive before we start the drug. One trouble is we don't know just how long the tail is on the tail end of an attack. Sometimes it is a long stretch—sometimes it ends rather abruptly. So, together with our laboratory findings, we must use our clinical judgment. For the sake of our own information, in certain cases we have started a little early to see what would happen. So far, Dr. Dawn and I have met no difficulties with these half-dozen cases who were started on very small doses and watched over a period of time. Still, as a general rule, I would say that the drug should not be given until all evidence of the rheumatic episode has disappeared.

Dr. Dodge. I agree with Dr. Thomas that one can probably start the drug very close to the end of active infection, if one realizes that in a few cases one may encounter flare-ups of the subsiding attacks. The flare-ups that have occurred in our experience have not been severe. We started 10 children 2 months or less after the last sign of activity; 4 of these were started 1 month after the first normal sedimentation rate—1, 2 weeks after, 3, 3 weeks after. The other 6 were started between 5, 6, and 7 weeks after normal sedimentation rate. In those 10 cases we had the 2 flare-ups that I mentioned, within 2 weeks of starting the drug. Both of the flare-ups were very mild. We continued the drug throughout and their signs of activity subsided over a period of weeks without in either case becoming severe or appearing to drag out longer than we would otherwise have expected such symptoms to last. One of these 2 children went on the drug, a child with severe advanced cardiac damage, had a

mild flare-up following a streptococcal infection. She had fever, marked rise in the sedimentation rate, and increase in the size of her liver. We kept her on the same prophylactic small doses and her symptoms subsided in a 10-day period, although her sedimentation rate remained high. In 8 of those 10 cases we avoided the difficulty that Dr. Thomas mentioned, that of the child's acquiring a streptococcal infection shortly after leaving the hospital.

Dr. KUTTNER. I think all clinical symptoms should have subsided at the time the physician starts giving the drug. In my opinion, if the sedimentation rate is still somewhat elevated but is showing a tendency to come down, it is usually safe to give sulfanilamide.

COMMANDER COBURN. I have a rather conservative attitude on that point. The least time we allowed to elapse was 3 months, and the reason for this was that we were not able to tell when the disease was inactive. In fact, sulfanilamide administration served as a therapeutic test in several patients; the disease was reactivated within a week after giving the drug. In our patients, most rheumatic attacks have occurred in the spring; in the summer and early fall months patients have been relatively free from exposure to infection. So it has been our feeling that it was better to let the patient's infection subside completely over the summer months and then begin prophylaxis in the fall. It proved important to watch closely for signs of reactivation of the rheumatic process by the drug during the first 10 days or 2 weeks. We are inclined to feel it is better to err on the side of waiting a little too long than to stir up fresh rheumatic activity.

DR. SWIFT. Are there any questions from the floor?

Dr. SPEKTER. Would length of time depend, too, upon the season when the activity ended? If it occurred in November, you might want to start the sulfonamide sooner than you would if the end had occurred in June.

Dr. SWIFT. If the patient's rheumatic fever were active in June, you wouldn't expect many relapses during the summer months and you might wait. In November, when the so-called rheumatic season begins and exposure to streptococci is greater, you might be willing to start it earlier.

Dr. FEINBERG. There is the possibility, too, that the child could be transported to a more favorable climate, a climate such as that of the subtropics where the danger of streptococcal infection is less great. Would you start the sulfa there, in such a case, or would you prefer to leave that child without any sulfa therapy for that season?

Dr. SWIFT. It seems to me the question of climate is answered by the discussion of the last point. The summer climate in the North is much like the general climate in the South. One might answer the question by saying that if the patient were going to a climate where he would not be exposed to streptococci, one would hesitate in prescribing prophylaxis. There is also the question of moving the patients to their homes. It is the experience of most people that many children, particularly in the days before we tried to prepare the home for the child, were put right back into the environment in which they had contracted the disease. In our own experience, on more than one occasion, by treating the mother for upper-respiratory infections we seem to have helped the child.

To summarize this point in the discussion—the group feels, in general, that a mild degree or absence of rheumatic activity is desirable before the drug is started. Some of the group lean more toward waiting, some toward starting at once. This brings up the question that Dr. Dwan mentioned yesterday—in the late phase of a rheumatic attack if there is evidence of disease that might be due to a sinusitis, alveolar abscess, or one of the other low-grade infections, should sulfa drugs be used? Do you think so, Commander Coburn?

COMMANDER COBURN. I don't think there is any harm in trying if they are getting along all right. However, you may get a flare-up.

Dr. SWIFT. The point is this, Commander Coburn, that the removal of a tooth or operation on a sinus is not infrequently followed by recrudescence of the rheumatic process and there is the added danger, particularly in pulling a tooth or in a tonsillectomy, of having a temporary bacterial bloodstream invasion and the onset of a subacute bacterial endocarditis. Would you use a sulfa drug at that time, to try to prevent those complications?

COMMANDER COBURN. I certainly believe it better to use the sulfonamides and have a little flare-up of rheumatism than to risk subacute bacterial endocarditis.

Dr. KUTTNER. I agree.

Dr. DODGE. We have been using sulfa when it was necessary to extract a tooth, even in the presence of rheumatic activity. We feel that the bacteremia is of very short duration and that one dose of sulfadiazine a few hours before the extraction and perhaps a gram a day for 2 or 3 days following extraction, covers the period of danger. We have seen no evidence of increasing rheumatic activity in the few patients we have handled in this fashion.

Dr. HANSEN. We have followed the same procedure for the last several years, and we believe it should be done, for the time being.

Dr. CHANDLER. I think likewise.

Dr. THOMAS. It has been done routinely in the wards in Johns Hopkins for some time, and in my recollection there have been few, if any, rheumatic flare-ups. It has been done in dozens of cases.

MAJOR BUTTON. I certainly agree sulfa should be used.

Dr. SWIFT. That has been our experience. We have had one case that is an exception. The patient had rheumatic fever. In the convalescent stage he developed a urinary infection, was given large doses of sulfanilamide, and had a prompt recrudescence of the rheumatic symptoms.

Dr. ROGERS. One doctor mentioned sulfadiazine. Have you ever used sulfanilamide? It might make some difference.

Dr. DODGE. For prophylaxis at the time of operative procedure we have used sulfadiazine and not sulfanilamide.

Dr. ROGERS. And the others?

Dr. KUTTNER. Sulfanilamide, and more recently sulfamerazine.

Dr. HANSEN. The choice of sulfa drug in our clinic has varied with the popularity of the drug at the particular time.

Dr. CHANDLER. I should like to ask Dr. Taussig what she is using now.

Dr. TAUSSIG. We are using sulfadiazine while we have it, but the Army and the Navy have most of it; after that, we use sulfanilamide or pyridine or merazine, depending on which is available.

Dr. DODGE. We prefer a slowly eliminated drug, particularly for tonsillectomy, because it is often not possible to get a dose into patients the first few hours after a tonsillectomy and we feel if they have a good dose before they go to the operation the level maintains itself until they have recovered enough to get another dose 24 hours later.

Contraindications to Sulfa Prophylaxis

Dr. SWIFT. The next question to be discussed is whether any abnormalities in the child's general physical status should be considered to contraindicate prophylactic doses of the sulfa drugs—such abnormalities as anemia, abnormal white count, kidney dysfunction, liver dysfunction, elevated blood pressure, and allergic conditions.

COMMANDER COBURN. I think none of those should be considered contraindications to prophylaxis.

DR. THOMAS. I think it depends entirely on the total picture revealed by the physical examination. I don't think any one of these items should be an absolute contraindication. The examining physician must make up his mind as to the condition of the patient but I have no reservations about any one of these abnormalities.

MAJOR BUTTON. I agree with Dr. Thomas.

DR. SWIFT. Any questions from the floor? On the question of kidney dysfunction, one should be aware of the fact that when the kidneys are markedly involved, there is less excretion; hence there may be an accumulation of the drug to the point of toxicity, although that would be a very exceptional thing with the doses that are recommended for prophylaxis.

Home Conditions in Relation to Sulfa Prophylaxis

Now we come to the question as to what the home conditions must be if sulfa drugs are to be used safely.

MAJOR BUTTON. I think this is the point at which the treatment will succeed or fail. In our experience it was very hard to get the cooperation of the parents and the child, and the parents have to cooperate with you to the greatest possible extent if you are to use this drug under clinic conditions. I didn't mean to give the impression a while ago that I didn't approve of the use of sulfanilamide prophylaxis for rheumatic fever, but I do think it should be very well controlled, and I think the control of the clinic patients is almost too difficult to warrant the use of the drug.

DR. THOMAS. We had to deal entirely with clinic patients. We did not have any convalescent homes available. I agree with Major Button that without cooperation safe use of the drug is, of course, impossible. I found that many of the parents were very eager to cooperate, however. And the patients themselves, especially those adolescents and adults who had one or more severe attacks that caused them to be bedridden for a year or more, sought eagerly for anything that offered them a chance of avoiding such an unpleasant situation in the future.

The first few months are the important ones. Both the physician and some other competent person—the public-health nurse or the medical-social worker—should interview the parents and children and interpret their reactions carefully. Home visits will have to be made to see if the child is actually cooperating in taking the drug—perhaps surprise visits to check up on the blood level of the drug. Careful control of the child is necessary during the first 6 weeks of therapy. After that, if the child and the parent are cooperative, with continued supervision and encouragement over intervals—and they don't need to be close intervals—the course of prophylaxis may be continued indefinitely.

DR. CHANDLER. I agree with Dr. Thomas there, too. With clinic patients you do have to have a cooperative group. I don't think there is any question about it. You have to have as much help as you can get from your medical-social worker and your public-health nurse, and so on. It is not impossible to get cooperation from the parents and the children themselves. I think you have to spend time in trying to explain what you are doing and what you hope to attain, also what the possible pitfalls may be. We gave each mother a typewritten list of things to look for, reactions that we said might not be good for the patient. We warned the mother about things like rashes and explained carefully how she could reach us in case any of these reactions occurred. As a result we had excellent cooperation.

DR. HANSEN. As a medical student I was convinced on a few occasions that scabies couldn't be cured and impetigo couldn't be cured and diabetes was a poorly manageable disease because of the lack of cooperation. Now I know that if we do our best to explain the situation to parents, and if they recognize the seriousness of the disease, we do get the cooperation of the large majority. There are a few, of course, whom we do not reach, particularly those who are not very intelligent.

DR. DODGE. We were very doubtful when we started as to whether we could maintain sufficient cooperation to give some of our patients this kind of prophylactic treatment. We had a special card printed with a list of signs of infection and toxicity; the card stated that if a child showed any of the signs he should come to the clinic or the parent should call the hospital. We found it very helpful to have the patients seen, every time they came in, by one or the other of the two doctors who knew them intimately. I think that is an important point—having the same doctors and the same nurses see the patients each time. We ran our group, interestingly enough, without any social worker; we kept our social worker in our regular clinic. We counted on the frequency of the visits to keep up the contact. It was extremely successful.

We treated successfully a total of 88 children. Nine additional children were started on the drug, 4 of whom we dropped because they proved to live too far away from the clinic to make the trekking back and forth feasible. This left us only 5 out of 97 children who, in the Bellevue clinic, with its low average I. Q. level, had to be dropped for noncooperation. Some of those we dropped only after the middle of the year when we discovered that their blood levels were consistently zero and we therefore said, "You are not taking the drug and we won't bother with you any longer." I was surprised, yet I think this is a fair indication that cooperation is not necessarily dependent on high I. Q., particularly with a group of children who have been seriously ill and whose parents are very apprehensive of further attacks.

DR. KUTTNER. I have no experience with clinic patients.

COMMANDER COBURN. Our difficulty in the clinic was in getting the children to take all their sulfonamide tablets. They were impressed when we obtained blood levels and found some of them delinquent. The best method, we found, was to resort to a system of bribery. If the patients had good records, kept their blood levels high, and had the right number of tablets brought back at each visit (we had given them a certain number they didn't know about) we gave them a prize at the end of the year. This system worked out all right.

DR. SWIFT. Any general discussion or questions?

DR. HUSE. I should like to hear a good deal of general discussion from the floor on the question of the selection of the patients to receive this type of drug. In the meetings that we have had these last couple of days we have all got the impression that some of the State rheumatic-fever programs are small and easily handled. Actually, some are very widely distributed, as in Oklahoma, where patients are taken from every corner of the State. The question as to which children might be selected to receive sulfa treatment is a very important one for the States. I hope that the physicians, medical-social consultants, and nurses will discuss this very freely now while we have experts to tell us the answers.

DELEGATE. The speakers have been talking of their groups in the past tense—have they discontinued the use of the drug in all these groups?

DR. SWIFT. I think with the military men that question is easily answered; they have not. Dr. Thomas is continuing her group; Dr. Chandler is not; Dr. Hansen is.

DR. THOMAS. Our clinic was closed on account of war exigencies. There is no longer an adult cardiac clinic, but that was not because sulfanilamide was not a success.

DR. DODGE. Ours closed because we are still giving the patients summer rest, although we may not continue to do that. We are planning to continue giving a sulfa drug this fall.

DR. JACKSON. The phase I should like to have discussed is: Should other factors be equally considered in the prevention of rheumatic recurrences? The streptococcal-invasion phase may be only one factor. I think we must be careful not to overstress the use of sulfa drugs in preventing this disease. We should make every effort to tackle the difficult problem of improving the general living conditions of these children rather than place too much hope that we have found an easy way of preventing recurrences. It requires much more time, knowledge, and patience to instruct a mother how to care for and feed her child than to instruct her to give a few pills each day. It is usually easier for the social worker to obtain medication for an indigent child than to obtain good housing and good food. At the present time, we are analyzing the incidence of recurrence in our group of over 500 children that have been under close observation from 1 to 7 years. We have tried to improve the general living conditions of these children, and a special effort has been made to see that each child is receiving an adequate diet. The incidence of recurrence among our patients has been low, and we have not used the sulfa drugs in the same manner you people have described—in fact, until very recently we were not using them at all.

I was very much interested in the discussion concerning the advisability of sulfa prophylaxis for children with rheumatic fever in areas where close medical supervision is difficult to obtain. In such areas we are encouraging the family to give the child meticulous general care at the time of an upper-respiratory infection and to use aspirin freely. If the child has a definite sore throat or is exposed to a sore throat, the family is told to make every effort to consult the family physician. We have recently tried to educate the physicians to use the sulfa drugs if the child is exposed to or has a sore throat or if there is an epidemic of streptococcal infections in the community.

We have not advised the continuous use of the drug, and I do not think anyone in a State as large as ours would dare give a toxic drug to children spread all over the State without having closer supervision by the local physician than is possible during wartime.

The evidence that has been presented shows that sulfa prophylaxis is a very definite factor in preventing intercurrent streptococcal infections so that I should not be willing to omit its use. I should want the children to have the benefit of it. I think it should be used, but I should be very reluctant to give it continuously to all these children spread over such a large area.

Before using the drug we had a very low incidence of recurrence, but this was over a relatively short period of time. This low incidence of recurrence may have been due to other factors, such as the nutritional factor—at least that is the one we have particularly stressed. The other pediatrist on our service working with me the other day rather startled me by asking, "Do you ever have recurrences in these children?" He had been with us 16 months and had not yet seen a recurrence. This prompted us to undertake an analysis of the frequency with which we are having recurrences. I do know we have some, particularly in the chorea group. Since we were having a low rate of recurrence without using the sulfa drugs, we are extremely reluctant to consider using it

continuously. Are there not other factors that should be as carefully evaluated in preventing rheumatic fever, even the first attack?

DR. SWIFT. If nutrition is a tremendously important factor, we shouldn't have so much rheumatic fever in our armed forces, because they receive an excellent diet, and yet they are having a lot of rheumatic fever.

DELEGATE. Isn't that just in the first few months of training, though, when you really can't say the diet has had a chance to work?

DR. SWIFT. No; it has also come later. Our troops are having rheumatic fever in Australia, in New Zealand, and in India. You may say that the men there are not having as good a diet as the men in training here, but it has been my impression—and I have seen quite a good deal of rheumatic fever in the naval forces—that their nutritional state on the whole was pretty good. We have gone into the question of diets to find out whether the sailors have voluntarily discarded some of their foods, and in most instances they have not. Soldiers and sailors are rarely notional about food and, as a group, they eat what is served them.

DELEGATE. Don't you think concentration of population might make a great deal of difference? Most of the patients in these clinics come from large cities, whereas people in Iowa are from smaller communities?

DR. SWIFT. I am unable to comment, and I think most of us are unable to comment on these rural programs. I have talked with Dr. Jackson and other people and I know hemolytic-streptococcal infections are common in rural communities and rheumatic fever is found to a marked degree in most, if not all, such infected areas.

DR. THOMAS. I should think if they are having no rheumatic-fever recurrences in Iowa there is no reason to institute any prophylactic program. Certainly it must be individualized State by State. I do want to call attention to the fact that we on the Eastern seaboard have noticed great yearly variations in the incidence of rheumatic fever, and during one or two of the recent winters there has been very little. Unless you have been studying the disease for 5 or 10 years in Iowa, 1 year when there are no recrudescences doesn't mean a great deal.

DR. HANSEN. We live in Minnesota, in the neighboring State to Iowa on the north, and I regret to say that we have not had the same results that Iowa has obtained. On several occasions I have had the opportunity to examine school children in some of our southern Minnesota counties and have found that as many as 3 percent of these children show evidence of rheumatic infection and rheumatic heart disease. Certainly, as Dr. Thomas said, there is a lot of yearly and seasonal variation, but, judging from the children who come to the hospital from our State, we are less fortunate than Dr. Jackson.

COMMANDER COBURN. I am very sympathetic with what Dr. Jackson said. It seems to me he may have a peculiar condition in this area. If he can work out this factor and determine whether something in the diet protects the rheumatic child during his early years, then we may not need to use sulfanilamide or sulfadiazine in the future. At the present time, if the rest of us are going to use sulfonamide phophylaxis, let us depend on Dr. Jackson to investigate this problem.

DR. SWIFT. It would be most unfortunate if we allowed the use of sulfa drugs to rule out all investigation as to the nature of rheumatic fever or other ways of treating the disease.

DR. TAUSSIG. The panel has not yet stated whether it is recommending sulfa prophylaxis for everyone who has had rheumatic fever; that is, is the recommendation limited to the children who have had rheumatic fever with rheumatic heart disease, or is it to include the children who have had just a single attack of

polyarthritis without heart disease? To date, I have not recommended it for a child with a single attack of polyarthritis without heart disease unless he is a member of a rheumatic family. If you start a clinic that is interested in initial attacks—and I think most of the programs in the States have preferred to take children who have had but a single attack—in the first year or two your incidence of recurrences will certainly be very low because there are a number of children who are not going to have recurrences. That may partly explain Dr. Jackson's results. On the other hand, the reported groups that received sulfa prophylaxis have had repeated recurrences, and such groups are especially susceptible to streptococcal infections.

DR. HALL. In Oklahoma we have a widespread program. We have no idea of using sulfanilamide throughout the State. If we use it, it will be only in the center at Oklahoma City and perhaps in the county around Oklahoma City, so that we may bring the children in, make the necessary examinations, and do the necessary laboratory work. We might perhaps use it in one or two of our other centers out in the State, where facilities are available. We wouldn't think for 1 minute of establishing it throughout the State as a whole.

DR. FISCHER. I represent the State of Washington, which is an equally large, semiprosperous State. I wish to reiterate the problems incident to the use of sulfanilamide if it is not closely watched. Those who are interested in this program, pediatricians interested in children, should use the same selectivity in the use of this drug as we would in the use of other therapy. I should hate to see this group commit itself to widespread use of sulfa prophylaxis particularly in the face of the tremendous amount of work our armed forces will be doing on the subject. At the station some 80 miles north of us, it is rather common knowledge that they are caring for, not just 40 or 50 cases, but from 300 to 500 cases of active rheumatic fever in boys in the Navy. I have complete faith in our doctors in our armed forces and I think that out of the study of all these cases will undoubtedly come a very splendid piece of work that this group will be able to use. In the meantime, the use of this drug has to be left to the man on the job. I myself am not going to prescribe sulfanilamide for any of my patients who live 80 miles away. I don't want that responsibility because I can't get to them often enough.

DELEGATE. Dr. Huse has asked what difficulties the States would have in carrying out this type of treatment. I can tell her right now the chief difficulty would be that of getting medical and technical help to follow up these cases. I think we all agree it would be wonderful if we could have a small, well-controlled group, but right now even the clinics in which such groups were originally set up are handicapped because of lack of help. It seems to me, therefore, an almost insurmountable problem to start any new groups.

DR. SWIFT. There is one point I should like to make here, namely, that it is necessary to have the parents know what is going on. It has happened more than once that when children who have been on prophylactic treatment have contracted a sore throat, their parents have taken them to private physicians. Not knowing about the drug that the patient is receiving, and thinking the child has an ordinary sore throat, the physician has given him sulfa drugs and the patient may have developed complications, since his sore throat was due to blood dyscrasia rather than to a streptococcal or other infection. It is a question in my mind whether there should not be some way of giving each of these patients a card on which the prophylaxis is outlined and instructing the parent that if the child becomes sick and is taken to any other physician, this card should be shown to him.

We shall now take up the question: What factors should be considered in administering this type of chemoprophylaxis? First, let us discuss the choice of the drug. Will Commander Coburn start?

The Choice of Drug

COMMANDER COBURN. I think sulfadiazine today.

DR. KUTTNER. I think the choice lies between sulfadiazine and sulfamerazine.

DR. DODGE. Probably sulfamerazine, but the choice would depend on price and the ease of getting the drug. Although we feel convinced sulfamerazine will work exactly as well as sulfanilamide, it will definitely be an investigative procedure to use a new drug. But we believe sulfamerazine will be just as effective and easier to use. Also it will be easier to maintain a blood level with one small dose a day than with sulfanilamide.

DR. HANSEN. I believe that any of the drugs mentioned may be used. If physicians would rather use some other drug of the sulfa series with a view to evaluating it, I would say that would be perfectly all right.

DR. THOMAS. I agree with Dr. Hansen that probably all the sulfa drugs mentioned, sulfanilamide, the oldest, or sulfadiazine, or sulfamerazine, the newcomer, may be used. For the benefit of those who haven't heard much about sulfamerazine, I may say it has been passed by the Pure Food and Drugs Act now. It is excreted by the kidneys five times as slowly as sulfadiazine and therefore there is a much more stable level of the drug in the blood; the peak doesn't need to go so high because the valleys subsequently won't be so low. If an adult takes half a gram a day, a blood level of about 2 mg. percent is maintained. In children, the dosage may be even less. It looks, therefore, as though sulfamerazine would be the drug of choice in the future. If a program were to be set up today, however, I think it might be impossible to obtain sulfamerazine and therefore sulfanilamide or sulfadiazine, if it is obtainable, would be just as good.

MAJOR BUTTON. If I were working on this problem at the present time, I think I would use either diazine or merazine, as Dr. Kuttner said.

DR. SWIFT. At this point I intended to present a few lantern slides, but our time is going, so I shall summarize very briefly by saying that I feel, that of the sulfa drugs so far tested, sulfadiazine is to be preferred. We conducted a rather large experiment in New York, the results of which have been published in the Journal of the American Medical Association this year.[1] We gave sulfadiazine, a gram a day, to several thousand sailors. The exposure to hemolytic streptococci was much higher than most rheumatic children encounter. The first 800 patients received half a gram twice a day; the rest of the group, which was several times larger, eventually received one gram once a day. The epidemic of type 19 streptococcal infection that was starting in the first group was cut abruptly short by this dose.

In a second group, several times as large, all of whom were living under identically the same conditions, sleeping in the same hall, eating from the same kitchen, and using all these same public facilities, the incidence of respiratory streptococcal infections was steadily mounting. After a control period of 2 weeks, the second group was started on sulfadiazine and there was the same spectacular drop in scarlet fever, sore throats, and other upper-respiratory infections due to the hemolytic streptococci. In that large group of several thousand patients there were only three or four who had toxic symptoms severe enough to make us feel that we should discontinue the drug.

This was not a group of rheumatic-fever patients; but knowing what we do about some of the patients who were infected with this particular strain, we feel

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[1] Robert F. Watson, Francis F. Schwenkter, J. E. Fetherston, and Sidney Rothbard: Sulfadiazine prophylaxis in an epidemic of scarlet fever, J. A. M. A. **122**: 730 (July 10), 1943.

that somewhere between 5 and 10 percent of those men would have developed rheumatic fever if they had not been prophylactically treated.

That brings up the question of dosage.

Dosage

COMMANDER COBURN. I think, for adults, perhaps 1 to 2 grams a day, sulfadiazine or sulfamerazine.

DR. SWIFT. How much for a child?

COMMANDER COBURN. I should think one-half gram a day for a child.

DR. KUTTNER. We were able to maintain a level of 1½ to 2 mg. percent with a dosage of 1 gram to 1.3 grams of sulfanilamide. The last 3 months that I was at Irvington House we studied sulfamerazine and found that drug very easy to manage. We had far fewer toxic reactions, and we were able to maintain the same blood level of 1½ mg. to 2½ mg. percent on a dose of .25 to .5 of a gram, given once a day, in the majority of the children.

DR. DODGE. For sulfanilamide we found that our range was from 1 gram for the small children to 1.6 grams for some of the larger, adolescent children. I have a feeling that we used rather more than we needed. We are planning, if we use diazine, to use a half a gram once a day for the younger children and 1 gram for those of approximately adult weight. If we use merazine, we shall take Dr. Kuttner's recommendation, since we haven't used it and she has had experience with it.

DR. HANSEN. These remarks are based entirely on our experience. At the beginning of our study, 0.3 gm. (5 grains) of sulfanilamide twice a day were given to a few children. Two of these children developed recrudescences, and we therefore felt that this was not enough to prevent recurrences. To the younger children we now give 5 grains three times a day or 1 gram daily; for the older children, 1.3 grams or 10 grains with the morning and 10 with the evening meal. This seems to prevent the recrudescences. Our experience with sulfadiazine and sulfamerazine is practically nil, but we shall certainly be pleased if we can use a smaller dose once a day.

DR. CHANDLER. We used sulfanilamide in doses varying from 0.6 to 1.7 grams, depending on the size and age of the child. Generally, the smaller children took the smaller dose to maintain a level of 1 to 2 mg. percent, and the older ones took the larger dosage. We had only four children on sulfadiazine. Their doses varied, between half a gram and a gram a day, but our experience was very limited with that drug. I think sulfamerazine or diazine sound as though they would be very good to use.

DR. THOMAS. We used 1 to 1.3 grams a day. I should like to point out one or two things. There has never been adequate information as to what the lowest blood level may be. We have talked about 1 mg. percent or 2 mg. percent as being adequate. It may be that in some of the drugs that aren't excreted rapidly, very low levels are sufficient. What we are trying to do is to saturate the tissues of the body with some degree of this drug and have it there available when the hemolytic streptococcus comes to the portal of entry. It doesn't take very much drug to inhibit the individual streptococcus. The difficulty we have with very small doses of sulfanilamide is that before the next dose is given, all the previous dose has been excreted and so, for part of the time, the blood level is very much too high and at other times it may be too low. If we have a drug that is slowly excreted, then I think the blood levels may be very much lower.

MAJOR BUTTON. We used a gram and a half of sulfanilamide up to a weight of 55 pounds and beyond that we used 2 grams a day. I would bow to Dr. Kuttner's knowledge of sulfamerazine and use her dosage.

DR. SWIFT. Any questions from the floor? The question of the sulfanilamide blood level comes up at this point. As Dr. Thomas has already implied, there has been no proof about this, but I should like to hear the experience of the group.

Blood Level

MAJOR BUTTON. We didn't do blood levels on our cases; I used the dosage suggested by Commander Coburn in his original article.

DR. THOMAS. We did blood levels primarily to check up on the patients to see that they were taking the drug. In our experience there was a fair degree of uniformity, I think. After the blood level has been checked once or twice in a given patient, I don't think it needs to be checked again if the patient continues on the same dose.

DR. HANSEN. I feel that the blood level of sulfanilamide is valuable in determining whether or not the patient is taking the drug.

DR. DODGE. I feel the same way. During the first week or so we feel better if we have a level because of the individual variation in children. After that, we used it to check on the reliability of the patient.

DR. KUTTNER. My impression that a level of less than 1 mg. percent is low is based on one case. A child in the sulfanilamide group contracted streptococcus infection at a time when his level was less than 1 mg. percent.

COMMANDER COBURN. I think it is helpful to know what blood level is maintained.

DR. ROGERS. I am rather puzzled. It seems to me we have shifted a little from a forthright presentation of facts on an experimental basis to a discussion of possible facts, somewhat on the basis of wishful thinking. We are now talking about specific doses of the sulfa drugs. Other than the work reported here we don't know much about the continuous use of these drugs in small children over long periods of time. Is it well advised to translate our present knowledge into action in the State programs? I suppose it is perfectly sound—I just raise the question.

DR. SWIFT. We shall discuss the question of the State programs later, so may I postpone your question?

May I present the results of our study of the group of young naval subjects mentioned before who took a gram of sulfadiazine a day? We determined the blood levels about 6 hours after the morning dose. Fifty of those patients had an average blood level somewhat above 2 mg. percent. The range was from a little over 1 mg. percent to somewhat over 3; the mean and median were between 2 and 2.5. A child, on the average, would weigh about half as much as these men, and so, according to our results, a half a gram a day would have been sufficient for a child. Dr. Kuttner is the only one who has mentioned a minimal blood level that seemed to be ineffective, namely, about 1 mg. percent.

There seem to be two reasons for determining the blood level: One is to learn how much of the drug the patient has in his blood, and the other is to know whether or not the patient has been taking the drug. There is another way to determine whether the patient is taking the drug—through a rather crude analysis of the urine. The drug is excreted in the urine, so one can make a quick qualitative color test. If the color is deep purple, you know the patient is taking fair amounts of the drug. If it is a very pale pink, you know he is taking very little, provided, of course, that his kidneys are functioning properly. This might be a method of checking up after the first week or two of more careful investigation of the blood level. This suggestion arises from a rather extensive experiment on animals in our laboratory.

We have already taken up the question of instructions and interpretations to the parents, and the child, and the school. Methods and frequency of check-up are points we should now discuss. May I again ask Commander Coburn to begin?

Methods of Check-Up

COMMANDER COBURN. I feel that the method and frequency of check-up depend on how far away the child is from his doctor. Whenever it is possible, the child should be checked carefully once a week for the first 2 or 3 weeks because most reactions to the drug are going to arise in the first 21 days. After that, check-ups should be made once a month, if possible.

DR. KUTTNER. It is important to know what the sedimentation rate is before the patient is started on the drug, because if he isn't completely quiescent, he may be in only a polycyclic phase and you might think you had caused a recurrence, when, as a matter of fact, he would have developed symptoms anyway. With these newer drugs the incidence of leucopenia seems to be so low that the check-up need not be so careful as with sulfanilamide, and the precaution of taking white counts every week may not be necessary.

DR. SWIFT. What about the various laboratory tests during the check-up?

DR. DODGE. We have followed our children very closely twice a week for the first 3 weeks, once a week for the following 3, and every 2 weeks thereafter. We felt that was very necessary during the experimental stage in the use of the drug. We are planning this year to cut that down. We are going to cut out hemoglobin determinations. We think any anemia of significance would be detectable clinically and then a hemoglobin determination could be made. We are probably going to omit white counts, although we shall probably do them during the first 2 or 3 weeks that the child is on the drug. I think, as Dr. Kuttner does, that one should know the sedimentation-rate level before starting and preferably it should be normal. The blood levels we have discussed before. We are going to continue to do those as a check, or the urinalysis, as suggested by Dr. Swift.

DR. HANSEN. I have nothing more to add, except that the frequency and type of check-up will depend upon what the physician says after he studies each individual.

DR. CHANDLER. I agree with Dr. Hansen. I think it is up to the physician to decide. In the early days we were very careful. We saw our children once a week for the first 4 or 5 weeks—twice a week for blood counts, of course—and then at 2-week intervals thereafter. I can't speak about these newer drugs because I have had no experience with them. If they should prove to be so much safer that fewer laboratory procedures would have to be done, that is all to the good.

DR. THOMAS. I should like to call attention to one point that hasn't been brought out very clearly before. There is a period during which sensitivity to the drug becomes manifest. In looking up all the cases of agranulocytosis that have occurred after treatment with sulfanilamide, I found no well-verified instance that had occurred later than 48 days after beginning use of the drug. Therefore, whatever laboratory tests need to be carried out to safeguard the patient—white counts and hemoglobins (although as Dr. Dodge says there has been no evidence of severe anemia in this group)—such safeguards should properly be provided within the first 3 or 4 weeks, or possibly up to the first 6 weeks after starting use of the drug. After that, so far as I am concerned, there is no need of checking blood counts. You have to see your patient from time to time to keep his morale up, to make sure he is taking the drug, to see how his rheumatic state is, and so on, but I now let my private patients go 3

or 4 or even 6 months at a time, if they are cooperative, and if I have full knowledge that the parents will call me up if anything unusual happens.

MAJOR BUTTON. When we started off, we did the blood count, hemoglobin, and urinalysis twice a week for the first 3 weeks and after that the patients reported once a week. We did sedimentation rates every month. The doctor saw the patient in the clinic twice a week for the first 3 weeks, and then once every 2 weeks as long as our experiment lasted.

DR. SWIFT. Any questions?

DR. SPEKTER. This question of frequency of examination is very pertinent to those who are going to establish State rheumatic-fever programs. If a program is going to take advantage of the newer methods of prophylaxis, clinics will have to be held with sufficient frequency. If you hold a clinic only once a month, I personally don't think you can use this therapy.

DR. THOMAS. I think the public-health nurse, if she is well trained, could do a great deal of the checking up herself, and I believe if you had a clinic once a month, you could carry the bulk of patients who have already been started. The ones who are to start will come scattered throughout the year; they won't all come at once. Once they are started, I think, they might as well continue winter and summer. The reason I am in favor of that is because children so often congregate in groups at summer camps and playgrounds. They go into swimming pools where streptococcal infections are not uncommon, and thus they are exposed to such infections even in the summertime. If a properly trained nurse could visit the patients once a week at the start, check up on their symptoms, examine them superficially for rash, inquire whether they have had nausea or vomiting, do a white count, examine the urine (as Dr. Swift suggests) for the presence of sulfanilamide, the patient would not have to be brought in to see the doctor so often.

DR. SWIFT. Let us go right on with the question, Commander Coburn, about the choice of the year-round or seasonal administration.

Year-Round or Seasonal Use of Sulfa Prophylaxis

COMMANDER COBURN. Preferably year-round, I feel, in this environment, although one is usually safe in omitting prophylaxis during the summer months and administering the drug only during the school months.

DR. KUTTNER. I think it is simpler to continue the year round. Otherwise you have the problem of restarting use of the drug in the fall, and you have to carry through a lot of laboratory procedures again at that time to make sure there is no evidence of sensitization after an interval.

DR. DODGE. I think that the practical point of the difficulty of starting a group and feeling one must have it under close observation is a very important argument for keeping the patients on the drug the entire year round. In addition to that reason, however, in our group of 181 we had 37 between-season relapses. (Even when the number of relapses is added to those we had during the rest of the year, the annual recurrence rate was very low.) When we use sulfa prophylaxis as a routine clinic procedure rather than as an experimental one, I think we shall give it the year round.

DR. HANSEN. Probably the answer to the question as to year-round or seasonal administation of sulfa depends, to a certain extent, on the climate and the conditions under which one is working. After all, the situation may be different in California from what it is in Minnesota. For best results, however, I would say the year-round administration would be better.

DR. CHANDLER. I agree with Dr. Hansen. I have nothing to add except that if the drug is kept up during the summer months, or warm months, an adequate fluid intake should be stressed to the parents and children. It is important that the blood levels of the drug do not pile up.

MAJOR BUTTON. I think theoretically it ought to be carried on throughout the year.

DR. SWIFT. Questions?

DR. GUY. I don't know how many of you allow these children to go to summer camps, go in swimming, and congregate with other children under crowded conditions. May I ask if this group would feel that these children were safer in doing some of those things if they were receiving sulfanilamide during the summer? Would they be able to have more physical activity?

DR. DODGE. I feel the answer is yes.

DR. KUTTNER. I think you could let them go to summer camps and congregate with great ease of conscience.

DR. THOMAS. I think the child who is taking small doses of a sulfonamide drug can lead a very much more normal life, which is very desirable, especially with children who have been made cardiac invalids for a long time.

DR. SWIFT. There are reports in the literature of many relapses among groups of children sent to summer camps. Under those circumstances, I think certainly that if prophylaxis is good any time, it would be very good then. Here again, however, we should be guided more or less by individual conditions and environment with respect to the hemolytic streptococcal infections.

Now we come to the last topic for discussion today—criteria for discontinuing the use of the drug. I assume that we would stop using it at the first sign of any severe toxic symptoms. I judge that the other criteria are the course of the disease, age, and so on, and those are the points that should be covered by our discussants.

Discontinuance of Use of the Drug

MAJOR BUTTON. I don't see how you can set up criteria for stopping use of the drug once you have had rheumatic infection. To my way of thinking, you could, I suppose, stop it at puberty when there is some change in the individual's susceptibility. That might be a practical way of doing it, but I should think, on a theoretical basis, that its use should be continued until the patient has been free at least 5 years from all symptoms.

DR. THOMAS. People talk about taking a drug for 5 years as if it were something rather extraordinary and awful, but we must remember that these same patients, when they are older, may have to take digitalis for 5 years every day if they don't take this drug now, so you are choosing the lesser of two evils. No one would choose to take medicine at all if he could avoid it.

I believe—to answer the question Dr. Taussig asked a long time ago—it depends on the individual circumstances and the physician's and the parents' attitudes as to whether you would administer the drug after one initial attack. I think if there has been a clear-cut, well-defined, severe attack of acute rheumatic fever once, many parents and many physicians would feel justified in trying to avoid even a second attack. I personally would feel that way. Others may not. That is a question for individual judgment. If you should give prophylactic sulfanilamide to a young child who has had only one attack, certainly at the end of 5 years the sulfanilamide might be discontinued. In the cases of young children who first come under observation after several attacks and with pronounced cardiac damage, I should say, if they are under 10 years of age, they

might benefit by taking sulfanilamide for 8 or 10 years. I have had one boy taking the drug for 7 years. He had a relapse as soon as he stopped taking the drug one summer and I don't think he is going to stop it again. I don't know what to do about him. He won't stop and if I stop it he will probably have another attack and blame me, so he just goes on taking it.

DR. CHANDLER. Our original idea was to put our group on the drug and keep them on it for 5 years because of the fact that rheumatic fever seems notoriously prone to recur within the first 5-year period. We weren't able to do that, it is true, but I should think at least 5 years would be desirable.

DR. HANSEN. Everyone here has tried to evaluate critically the use of sulfonamide prophylaxis. Now we have arrived at the question as to when we should stop using the drug. I think we have no criteria available. What we do know is that two-thirds of the children who have rheumatic fever will have a recurrence, that 60 percent of those recurrences will occur within 2 years and 80 percent within 5 years, and that the recurrence rate before the age of 16 is six times that after 16 years. Those general figures indicate that we should probably continue the drug for about 5 years or to the age of 16 years. This question needs further study.

DR. DODGE. I feel we don't know the answer to that question yet, as Dr. Hansen said, and that we have to study the question further to know how long a child should stay on the drug in order to get him past the likelihood of relapsing.

DR. KUTTNER. I think it is essential to keep up the drug for 5 years in any child below the age of puberty. For a child approaching puberty it will probably not be necessary to continue it so long.

COMMANDER COBURN. I feel, as Dr. Kuttner does, that prophylaxis should be continued to puberty.

DR. SWIFT. Are there further questions?

DR. FEINBERG. Would you give the drug to other siblings in the same family?

ALL PANEL MEMBERS. No.

DR. SWIFT. Other questions?

DR. JONES. With regard to the length of time use of the drug should be continued, I should like to raise some questions based particularly on Dr. Thomas' data. The number of recurrences in her control group is small, and I gather that her group is the oldest of any of the treated groups that have been reported. I think we have no evidence on which to decide what to do with sulfa prophylaxis except at a particular season in a young child. For instance, we don't know yet whether the decrease in recurrences of rheumatic fever that occurs at puberty is dependent on changes in the growing organism, on development of immunity, or on changes in the herding process, since the average child leaves school about this age. We don't know yet whether taking people off sulfa drugs will make them immune. We know the drug won't protect them after it is discontinued; there is even a possibility it may make them more susceptible for a period of 5, 6, or 7 years. We also know that age isn't the whole story—for when you herd together men from 18 to 45, they get rheumatic fever just as 8-year-old children do. Many features of this are very disturbing to me. I am not trying to throw cold water on the whole matter—I am very enthusiastic about the use of these drugs—but evaluation is very difficult. It seems to me that the herding going on at present in the United States offers opportunities for studies that will answer a tremendous number of questions, particularly as to choice of drugs, adequate controls, and so forth. So perhaps we have jumped the gun in working on the thesis that sulfonamide prophylaxis is entirely a blessing.

I should like to know what the State programs have accomplished, so far as the child with rheumatic fever is concerned, and whether there is any difference in the rheumatic-fever picture in the communities that have programs as compared

to that in communities where the children have not have the advantage of such care. I should like to have expression from at least one State as to whether a well-run program wih public-health nurses and social workers has not altered the problem of recurrences tremendously. I should like to hear this before starting on the question of giving, for a period of as long as 5 or even 10 years, a drug that may be toxic.

It seems to me that we are a little bit ahead of ourselves in some of the discussion. We ought to realize that sulfa prophylaxis is still an experimental procedure and one that is tremendously difficult to evaluate. As the program has gone on today, I felt that I had no right to speak because I had never used any sulfa drugs and I assure you that we have, nevertheless, a very low incidence of recurrence of rheumatic fever in our carefully followed children. In our follow-up we carry out certain simple procedures, such as seeing that every rheumatic child has a bed if not a room of his own—that curtails exposure to community infection by a tremendous volume. Such simple procedures as that, together with good social and health measures, might accomplish so much that it would not be desirable to use sulfanilamide prophylaxis so extensively.

If we do embark on an extensive program of sulfa prophylaxis, we probably ought to include the siblings of rheumatic children. I think no one here doubts the fact that the multiple incidence in the family of a rheumatic patient is as high as that in the family of a tuberculous patient, so why not prevent the disease rather than recurrences?

Dr. Swift. Our time is so short that I will take the liberty of trying to bring out a few additional useful points.

We should probably have some expression from the panel members as to whether, if any of the State programs inaugurate this type of prophylaxis, they should let some of the patients go untreated to serve as control cases. Dr. Kuttner?

Use of Control Cases

Dr. Kuttner. My suggestion would be that in a State program I would treat with the drug all children who have clear-cut rheumatic heart disease. In every clinic there are a large number of children for whom not even experts can make a definite diagnosis of rheumatic fever—children who have joint pains or nosebleeds or that sort of thing—and I should think that during the first 5 years you could use the questionable cases as controls and just treat children who had definite cardiac involvement. In that way, you would be taking the cases in whom the likelihood of severe cardiac damage was greatest, and if you could really prevent recurrences in those children, I think the value of the drug would be established.

Dr. Dodge. If the prophylactic procedure is accepted by the State, I don't quite understand how the doctors can run controls.

Dr. Hansen. All we are basing our opinion on is what we have learned from our own controlled studies. All the experience we have is from certain clinics and from certain types of practice. Now if one is going to deal with entirely different set-ups and groups of people, he never errs in running controls, and the more controlled studies he has, the better. If you yourself are satisfied from your own experience that sulfonamide prophylaxis should be a regular measure, that is one thing; but if you are not convinced, by all means run a control.

Dr. Chandler. I agree with that statement.

Dr. Thomas. I agree with Dr. Hansen. Of all the studies that have been made I think Dr. Kuttner's fulfills the rigid criteria of controls better than any other. Both of her groups had had the same background, were in the same environment,

ate the same diet, mingled closely together, and yet the untreated group had a high incidence of rheumatic recurrence and the treated group had none. I think Dr. Jones will agree it is a little hard to explain this difference in incidence of recurrence by factors other than the use of sulfanilamide.

DR. JONES. I should like to correct that impression. I am firmly convinced about this whole procedure as it is reported in medical literature. I think Dr. Kuttner's studies are convincing beyond a doubt, but in addition to the acceptance of these, as individual seasonal studies, there are many, many more features of the problem.

DR. HANSEN. I agree the subject needs further study.

MAJOR BUTTON. I am not convinced that the drug should be used in a State program as yet, as I feel its use is still experimental—even the preferred type of drug has not yet been decided. I think its use should be limited to very well-controlled groups, such as the Army and Navy, and such as Dr. Kuttner has had in her convalescent home.

DR. THOMAS. I think Major Button is correct, and if groups can continue to be studied under research conditions, it would be very desirable. Because of the war, however, practically all the groups are being discontinued and the question really amounts to this: Shall this whole concept be dropped for the duration of the war, to be taken up at some indefinite future time, or are the States able to shoulder part of the burden of caring for the rheumatic patients in the interim, with the hope that a good deal of true preventive work can be accomplished? I think this is terribly important and I feel sure the personnel will be made available for such work by the decreasing need of personnel to care for acute rheumatics both in hospitals and in convalescent homes.

DR. HANSEN. Don't you think the help of statisticians would be most valuable in setting up these programs if they are later to bear statistical analysis?

DR. SWIFT. I am afraid we shall have to conclude the meeting within a few minutes, but Dr. Hansen has brought up a point that, from the administrative point of view, must be considered. In drawing up all these various criteria, in drawing up forms as to how these studies may be made, we need the help of a statistician. Perhaps the Children's Bureau would be able to provide the machinery for statistical analysis.

We hope that what we have covered on the program today has been of value. We are all thankful to the members of our round table for coming today and giving us the benefit of their experience.

[The conference was adjourned at 5 o'clock.]

THURSDAY, OCTORER 7, 1943—MORNING SESSION

GENERAL ADMINISTRATION OF STATE PROGRAMS AND COORDINATION OF COMMUNITY RESOURCES

DR. VAN HORN. Mr. Lawrence Linck, director of State crippled children's services in Illinois, will lead the session this morning on the general administration of State programs and the coordination of community resources.

MR. LINCK. Thank you, Dr. Van Horn. This session is not going to be formal in any way. It is to be an open, free-for-all discussion of general administrative problems with which the States are confronted in their efforts to establish rheumatic-fever programs, and to carry them out effectively once

they are established. I hope there will be free discussion from those in charge of programs in States that already have rheumatic-fever programs. Those of us who are planning to establish such programs in the not-too-distant future might make notes of questions that we should like to have answered by these experts.

What Modifications in State Programs Are Now Indicated?

MR. LINCK. The particular questions raised on the agenda at this point are, first—What changes would the States make if they were starting their rheumatic-fever programs anew? Certainly that is what those of us who do not have programs in our States are very much interested in hearing, and, second—What modifications are now indicated in existing State programs? Then a third question might very well be asked—What modifications, if any, might be indicated at this time in the Children's Bureau policies with respect to these programs? In other words, we are going to ask these questions: What is wrong, if anything, with the programs that are now operating? What is wrong, if anything, with the policies or procedures advocated by the Bureau?

I don't mean to imply that anything is wrong, but we are very much concerned with the general question of how these programs can be made better. How can they be made more effective? How can they be made to serve more children throughout the country? That, of course, involes a two-sided relationship between the States on the one hand and the Children's Bureau on the other.

Who wants to start the ball rolling? How about you, Dr. Mills? Will you answer some of these questions?

DR. MILLS. Well, I might start off. If we were starting over again, I don't think we would do everything the way we have done it. I am pretty sure we haven't done it perfectly by any means.

With regard to the size of the area served—when we first thought of starting the program, we made plans to include some seven or eight counties, covering a relatively large area in the northern part of California. The Children's Bureau advised us to limit our area, and after considerable protest on our part, we did limit it to two counties. Although one hates to admit it, the Children's Bureau was probably right. Our program is quite centralized, and I doubt that with the personnel, the hospital beds, and money available to us we would have been able to handle an area larger than the one we now operate. So I think that with regard to the size of area we started out properly, even though it was against our will. I might say, with regard to area, that we are eager to expand our program and I hope we shall hear some ideas about that this afternoon.

Our section was rural in character when we started but is now urban. These two counties were agricultural until the war started; now with the Mare Island Navy Yard in one county, Vallejo, and the shipbuilding yards in the other, Richmond, they have become suburban. Both counties have full-time county health departments and one has, in addition, a full-time city health department in the city of Richmond. The latter health department is quite new in its present form because although it has been established for a long time, it has developed only within the last 6 or 8 months. The presence of organized health departments in those areas has, of course, made our program more successful than it would have been had they not been organized. In regard to the adequacy of health and social services in the area, I would say that probably one welfare department was quite good and the other mediocre.

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As regards centralization or decentralization, I think we can continue to handle the area we are now serving with our present centralized program, but, of course, any expansion is going to require decentralization, and we hope we shall get some ideas about that.

MR. LINCK. I wonder if sometime before the end of the session you might volunteer some ideas about decentralization and how you would go about it. I think that is something that is going to concern many of us. Are there any questions that anyone would like to ask Dr. Mills on any of the points that he raised?

DELEGATE. In your two counties do you have any demand for your services just beyond the line?

DR. MILLS. Yes, we have quite a few requests from other counties. Unfortunately, in our first enthusiasm, we held one clinic up in Butte County, about 200 miles north; since that time we have had several requests from that county for hospitalization of children with rheumatic fever. In most instances, we have had to turn down those requests and to refer them to other agencies, such as the university hospital.

In one or two instances, counties outside that area have issued certificates. When a county certificate for a child is issued by the judge of the superior court, the child is eligible for care and the county pays the bill. If counties not included in our area have been willing to do that, we have accepted their cases.

MR. LINCK. Any other question of Dr. Mills? If not, I wonder if Dr. Kobes, of Maine, would like to talk for a minute or two.

DR. KOBES. Under the present circumstances we cannot see just how we would expand our particular program. We are pretty much hamstrung so far as getting physicians to do the consulting work for the cardiac program is concerned. When we started, we had our two cardiac areas in the two more built-up sections of the State. One was in Portland, which in normal times is the largest city in the State, with a population of 70,000; and the other, the Lewiston-Auburn area, has two cities with a combined population of around 50,000. The second area, Auburn-Lewiston, has not changed in population to any considerable degree during the past 2 years, but the Portland area very definitely has. Physicians have gone from that area, and the resources of the community have not increased to any extent. The public-health problems that have to be solved first are not the problems of crippled children, but the problems that arise in a military and shipbuilding area—that is, general community facilities, housing, sanitation, venereal disease.

The clinic for the Lewiston-Auburn area had to be discontinued. In 1940 we had three young pediatricians there; now we have none. There was also one cardiologist there but he has also gone into the service. We felt, therefore, that it was advisable to discontinue the program in that area entirely, because we felt that the program very definitely should be run by pediatricians and cardiologists in the community. The reasons why we thought so are obvious to all of us.

In the Portland area we have increased our number of clinics because, as the needs increased and as the program progressively improved, two clinics a month were required rather than one. We have two clinicians; one for each of the two clinics. The size of the area served has been set very arbitrarily to lie within a radius of 25 miles around the city of Portland, but actually the clinic serves only a semicircle of that radius because Portland is on the seacoast. The 25-mile limit was set because beyond the circle transportation became more difficult and people could not get to the clinic as often as the physicians felt they should. In our State the people who attend the clinics have to purchase transportation or furnish it themselves. We have no transportation system like Oklahoma's or Iowa's for getting people to hospitals or clinics. I think our 25-mile area is one

that we would not want to change a great deal unless we felt that the program could expand to become a State-wide one.

One question often comes up that we haven't been able to answer. Is rheumatic fever more prevalent in the industrial areas than in rural areas, or is it an equally serious problem in rural communities? We suspect from the information that we pick up here and there that probably the incidence of rheumatic fever in our rural areas does not vary a great deal from that in the built-up areas. We haven't done any real statistical work to determine what the incidence is, but a relatively large number of cases referred to us, or that we hear about, are in the rural areas.

As to the question of how adequate the local health and social services are in the areas served—we believe that in greater Portland we have adequate local health and social services; our problem is to develop those services more than we have in the past. Recently a new full-time city health officer was appointed and we are now in a position to work with the local health department. I am sure, if we do so, we can get better local health services than we have had in the past. We face a problem similar to the problem in Richmond that Mrs. Sadler described yesterday. We have three kinds of public-health nurses in greater Portland, and much difficulty arises in determining just who should follow what cases. The same is true with regard to the availability of family social services. There are in the city 2 hospitals that we could use, one a large general hospital and the other a children's hospital of approximately 100 beds (most of which are supposed to be for orthopedic patients). Each of those 2 hospitals has a medical-social worker: One is a full-time staff member of the general hospital: the other is a worker who is at the present time lent on a full-time basis by our service, but the hospital contributes to some extent in paying her salary.

The matter of centralization or decentralization is one that we are very much interested in. We have done some decentralizing in our general crippled children's program and feel it can be carried out quite successfully as far as we are concerned and as far as the local area is concerned. We have operated our Portland rheumatic-fever clinics pretty much on a decentralized basis. By that I mean that the direction of the program comes from the State level, but the activities of the program are handled largely through the local services and the local personnel. One cannot really say that he has a truly decentralized program unless that program is actually run by the office of the district or local health organization, and that has not yet been done in our State.

I have noted before that we want to use and coordinate a great deal better than we do the various community resources available. We can coordinate and use community resources to the fullest extent, however, only by educating the various groups who are interested in that program, or should be, and by enlisting their support.

MR. LINCK. Thank you, Dr. Kobes. Are there any questions you would like to ask the gentleman from Maine at this stage? Someone might care to discuss the relative advantages or disadvantages of using a county boundary line rather than the 25-mile radius.

DR. KOBES. I think it might be well for those who don't happen to be aware of our governmental set-up to know that it wouldn't be very effective for us to work on county lines because the counties are merely geographical units—not political units. That is why we arbitrarily use a central point and then decide what area can be served best, judging on the basis of the transportation and other facilities in the area.

MR. LINCK. Are there any questions? Having gone from California back to Maine, I think we shall now come closer to home and call on Dr. French, of

Maryland, to tell us whether he has any suggestions for modification of the program.

DR. FRENCH. Our area is a county of 420 square miles, quite rural in character, excepting in that portion which impinges on the suburbs of Baltimore. We don't confine ourselves absolutely to this area, however; cases are referred to us from time to time from surrounding counties and we accept them. Service to cases from outside our area must be confined to that given in the clinic. We do not have facilities for follow-up care in homes outside our county, nor have the neighboring counties such facilities. We should like to enlarge our program by providing follow-up for cases outside our own county boundaries, whereby our clinic patients from other counties could receive needed social services.

I don't know what changes in the program the State would wish to make. Locally, I would say that if we were starting over again, probably we would profit by some of the mistakes that we have made and would start on a somewhat sounder basis. For instance, we would probably prepare our public a little more for the establishment of the program. Also we would be sure that we had on our staff, in the beginning, adequately trained people who could carry on the program. We had, of course, the help of Dr. Taussig of Baltimore, but locally we were all untrained in the proper handling of this condition. We are remedying that defect now by sending one of my assistants to Dr. Taussig for a year's training. When she comes back, she will be well trained and able to carry on more efficiently.

In regard to decentralization of the program, the counties in Maryland have an autonomy greater than that in most States. Thus, although the head of the crippled children's work in the State, Dr. Halliday, is responsible for the State program and for local projects, the actual development and administration of projects rest largely with the local health officers, under Dr. Halliday's general supervision. We are responsible for developing a heart-rheumatic-fever program and for its success. We are developing it as a part of the local health department's generalized program.

In Anne Arundel County we have only one social agency, the Welfare Bureau, which is so much preoccupied with relief that it can do little or nothing in the way of social service. We now have a medical-social-service worker on our staff but she has many problems and has to cover the whole area alone, since she has no social agency to which she can look for help or to which she can refer cases that need prolonged social treatment.

We hold most of our clinics at one central point, Annapolis. Recently, however, we have begun to take our clinics out into sections more remote—to outlying clinics near the patients' homes. The lack of transportation has led us to do so. We are finding it quite successful and I think we shall continue it as a policy. We have a nurse who pays especial attention to the rheumatic-fever clinic and she goes to clinics when they are held outside Annapolis. Our county is divided into districts in which our public-health nurses work and live. They are responsible for the follow-up on patients living in their districts.

Although we haven't much social service available in the county, we do have a great many community resources. We have a strong parent-teacher organization, which is closely tied in with the health department. In each district there is a local health association made up of citizens, many of whom may also be parent-teacher members. We have the interest and cooperation of every agency in the county. I don't know any area where you could find a better coordination of resources and a better interlocking of all sorts of services than in our county. This tie-up of resources makes it possible to disseminate in-

formation easily and widely. This is one of the things that we must do. I am sure we have not done as much as we should. I think we shall have to start an intensive educational campaign. I have been much interested and stimulated by many of the things I have heard here at this conference. Our failure to provide adequately for recreation, for instance, is just terrible. We can improve that, and we shall. We can improve many other things in our program by better education of our local groups and by greater use of their services, because I can say without any hesitancy that the service is there, if we wish to make use of it. I know that members of my staff have made great use of local resources throughout the county, but I can see many ways in which we can make even greater use of them and make our program better.

I think this program, like all other health programs, is one of education both of the general public and of the physicians. With our physicians we have a cordial and enthusiastic relationship. We stimulate their interest by calling upon them personally and explaining what we are doing; although some of them are slow, I am sure they will come along. I believe we shall have to continue to educate them in various ways and we shall have to continue to educate our public.

MR. LINCK. Thank you, Dr. French. Perhaps Dr. Dwan has some suggestions as to ways things might be done differently in Minnesota.

DR. DWAN. If we were to start this program in Minnesota again, I think we would choose a time when taxes, war-bond drives, and activities for the Red Cross didn't distract the interest of some of our wealthy individuals from philanthropic works, because what we need in Minnesota is a good convalescent home. There was a time when all you had to do was put the bee in some group's ear and you'd get your convalescent home, but that seems to be pretty much for the future now.

I should, however, like to have started action for a convalescent home when we first got organized. We have a series of steps with these children. They suddenly become sick; they are knocked out of life; they need medical care and they are either going to go down or up; we hope they will go up. As they go up, I think they should proceed by steps, rather than to proceed on a straight line and go home. In other words, I think it is a great stimulus to a child who has recovered from the acute stage of his illness to have a change of environment, to be able to think, "Now at last I am going to go some place else. I am sick and tired of these four walls." Psychologically a convalescent home is a great thing because it is a step upward. You also have more control over the problem of education in a convalescent home because there is more space; you can have a special room that can be used as a schoolroom. In most of our hospitals space is rather limited.

Being fundamentally a farmer, I feel, in spite of recent opinions to the contrary, that the place for a convalescent home is not adjacent to the medical facilities and professional staff, but in the country. I was thinking Tuesday afternoon as we were discussing the educational and recreational problems of these children—none of us has reached our second childhood yet and our first childhood is rather far behind us, and here we sit trying to figure out what a kid wants to do at 3 o'clock in the afternoon, after he gets up from a nap. Only one person knows what he wants to do and that is the child himself. I think most children enjoy being around growing things; they enjoy seeing a newborn lamb; even a pig has its good points when it's young. Whether children are raised in the city or in the country, there is an appeal in young animals and in the activities of rural life. A convalescent home in the country offers many advantages if it is near enough so that the consultants and the parents can get to it easily.

I also wish that we had had closer association with our school board when we first started out. We have had some rather unpleasant contacts with them. Last March we had a child who had recovered sufficiently so that she could go back to school. She was in need of just that last finishing touch to get her through the fifth grade. When we tried to get her back into school, the teacher said she had too much to do to mess around with a youngster who hadn't been able to keep up all year. She was sorry, but the child would have to wait until next year. I don't believe our school boards really foster that idea and I think cooperation with our school boards and our teachers, and education of our teachers in the problems we are discussing, are quite important. The reinstatement of these youngsters in school should be made as easy as possible for them. If they are to be physically handicapped and also uneducated, you really will have a social problem on your hands, because they can't make their living digging ditches or doing hard labor.

If we were starting again, I would also take over Dr. Jackson's idea of having the clinic set up in such a way that the private referring physician, the local health officers, and all other interested persons could visit our clinics and could consult with us as to the diagnosis and treatment of the cases. I think that is an excellent stunt.

In Minnesota we serve a rural area. We feel that when existing facilities are adequate, no competition should be introduced. Although the hospital is located in St. Paul, we serve six rural counties, which extend largely south of the Twin City area. Since the war, there has been a great shift of transient population to war-munitions plants north of Minneapolis and St. Paul. That group, we found to our dismay, was largely without medical aid, and the local physicians in those areas were completely swamped. I have repeated many times that we insist on the referral of the private physician. No child, however, should ever be neglected in this program; if there isn't a private physician, as in the group I have just mentioned, there is always a local health officer who represents and should care for that group. He can be made responsible for the child who has no family physician. He should be consulted with and worked with.

As I say, our territory is largely rural in nature. We have adequate and excellent local health and social services in the area served throughout the State. There are many counties that have no county nurse, however. An attempt to change that situation has been made in the legislature, but it never got anywhere. Maybe when the drain on nurses is less severe, that problem will be solved.

The question has been raised as to whether clinics should be held in outlying areas or whether the patients should come to us. Because of the difficulty of transporting the needed laboratory equipment, fluoroscope and electrocardiograph, I believe we can do a better job if the patients come to a central clinic.

MR. LINCK. Thank you, Dr. Dwan, for a very fine over-all view. Any questions for Dr. Dwan at this time? He has raised a number of challenging points. May we hear now from Dr. Rogers of New York?

DR. ROGERS. The war has made a serious impact on our program, particularly with respect to the convalescent hospital with 96-bed service that we were operating outside New York City. That service of necessity was restricted geographically to children from New York City and from adjacent counties. In these times we are carrying on as best we can with our limited clinic and follow-up service and our educational program. Of course, the lack of trained personnel at the present time is the major problem.

Looking ahead, however, I can merely reemphasize what has already been brought out several times. It seems to us that the really basic problem is medical education. As I mentioned before, Dr. Rutstein and our other asso-

ciates have gathered very convincing evidence showing the need for this as fundamental.

In solving the problem of case finding through education of medical men, primary responsibility should fall on the school physician. We should therefore bend our efforts toward a coordinated program with the department of education, which in our State controls the school medical inspection, and with the State medical society to reach the school physician with basic knowledge as to screening procedures. Obviously, we cannot train him to be an expert in the diagnosis of rheumatic diseases; we would hope, however, that he could be trained to recognize those cases that should be referred to established clinics with proper facilities and run by properly qualified physicians. In order to obtain a nucleus of properly qualified physicians throughout the State, we shall have to set up a training program in areas where we have well-qualified pediatric consultants. Where we haven't, I think we shall try to enlist the interest of some likely young man and send him to a cardiac service—either one we operate ourselves or one in New York City—on a stipend for 2 months, for orientation in rheumatic fever and heart disease. These men, once trained, would establish clinics. A well-qualified advisory committee would assist us in making routine visits to these clinics—it would be very valuable for the young men in the clinics to be visited by experts who would bring them interest and stimulus.

With regard to institutional care, in a State covering as large an area as ours, we would have to have strategically located convalescent hospitals. We and our advisory committee have not been satisfied as to the relative value of convalescent-hospital services for these children as compared with the value of an extremely well-coordinated use of all community facilities. There is much to be said for each, and I think the last few days have brought out many points about them. Streptococcal infection is one point. From the point of view of economy as well as integration with other services, I think the less separation into specialized compartments we have to make, the better; if we can develop our community services, our social services, our nursing services, our clinic services to the high degree possible in some communities, and if we have the advantage of such things as sulfa drugs to keep down streptococcal infection, I think it is entirely conceivable we may be able to give these children care in their own communities at a much lower cost than we could by creating expensive institutions. We had hoped, before the war intervened, that we would be able to carry out a controlled study of a well-organized system such as I have mentioned.

In New York City, of course, there is a very complex and unique situation. If I may, I should like to call on Dr. Rutstein, Deputy Health Commissioner of New York City, who, incidentally, was the director of our cardiac program until about a year or so ago.

DR. RUTSTEIN. New York City does not have a cardiac program in the sense in which we have been using the term today. There is no program under the direction of the health department that has diagnostic and follow-up service. What New York City has is a school health service—Dr. Wheatley discussed that yesterday—and, attached to the school health service, a so-called cardiac-classification service. The idea of a cardiac-classification service looked pretty good on paper, but I am not sure now that it is as good as it seemed to be. One gets into difficulties in setting up a diagnostic service in connection with the school. In the first place, the patients are seen but once on the average. It is very often difficult in this complicated disease to make a diagnosis at a single visit. In two groups of children attending the diagnostic clinic, a satisfactory diagnosis and

referral can be made; children obviously not rheumatic can be sent back to the school physician with a diagnosis of no rheumatic disease; children with obvious heart disease can be sent to a clinic or private physician. There is, however, a third group whose diagnosis needs further observation and follow-up. Thus, if you have a clinic limited to diagnosis, you have to be able to send the child to another clinic for follow-up.

Another difficulty arises in regard to the selection of the physician giving diagnostic services. Unless you are very careful, you may be opposing the opinion of the clinic physician to that of the doctor who sent the patient in. It is very essential that the medical director of the clinic be properly qualified in the diagnosis of rheumatic disease.

This leads to another point, the problem of postgraduate medical education in rheumatic disease. I believe firmly, as a result of our studies in New York State, that not every physician is capable, with the facilities he has, to make a diagnosis of rheumatic disease in most patients at the time he should make it. The general practitioner, however, is most valuable in serving as the screening agency, referring the patient to a clinic meeting proper standards. Then the patient would be referred back to the general practitioner for continued care. The general practitioner could then refer the patient back to the clinic for guidance as he saw fit. Postgraduate education should lower the general practitioner's threshold of suspicion to the presence of rheumatic fever. I think education of physicians is basic to the program. I am not trying to minimize the importance of other aspects of the problem, such as social and school aspects. I think without those things we can't have a program—but I do believe that if you are going to treat early cases, you must develop facilities to pick up those cases. It is a serious matter not to diagnose rheumatic disease when it exists, but it is to be emphasized that it is an equally great tragedy to apply the rheumatic label to the normal child.

MR. LINCK. Thank you, Dr. Rutstein. Are there any questions? If not, I shall call upon Dr. Hall to tell us about his suggestions.

DR. HALL. Our area is the entire State of Oklahoma. We have patients in practically every county, although the largest group comes from the area around Oklahoma City. The main clinic is at the crippled children's hospital, which is one of the chief hospitals used by our State medical school. Our patients are screened through the pediatric clinic and are then referred to our special rheumatic-fever clinic.

Besides the central clinic we hold clinics regularly in two areas out in the State that have splendid public-health units. The men in charge of these health units have had public-health training, and that is a big help to us. If at these clinics we find children who need hospitalization, we send them to the hospital in Oklahoma City. We have transportation facilities so have no trouble in getting our patients back and forth. We plan to establish approximately three more regular clinics out in the State after the war.

We feel that full use and coordination of community resources are very important. After our clinic in the morning we have a conference in the afternoon. This conference includes not only State personnel but also local physicians, welfare representatives, the county superintendent of schools, and often representatives from the Kiwanis and Lions Clubs and other organizations in the area. We have found the conference to be very helpful.

We have had the very best cooperation from local medical societies. We make it plain that the clinic is not in competition with the local physicians and they seem to appreciate that. Of course, a number of patients have no local doctors and they look upon the clinic as their physician and call on us for everything.

I have mentioned that the hospital is one of the teaching units of the State University. Consequently, our medical students are learning something about rheumatic fever. That is true also of our interns, and possibly 60 percent of them will locate in the State. Consequently, before very long, that will have a telling effect on the State as a whole.

We feel sure that there are children living in the State today who would not be alive had they not had the benefits of this program, and there are others who are better able to carry on as a result of the program than they would otherwise have been. Coordination of all services can accomplish this. We have a long way to go; we are not satisfied and hope we never shall be; but we do feel that the work is helping a great many of these children.

MR. LINCK. Now we come to Rhode Island.

DR. FEINBERG. I should like to make a few comments with reference to an organization that is being developed in Providence. I agree with Dr. French when he said that before a program is started the community should be educated to know what it is all about. That is just what we have done in Rhode Island. We have one of the smallest States in the Union, but its incidence of rheumatic fever is far from smallest. We are right in the middle of New England, which probably has more rheumatic fever than any other comparable area.

The nursing groups, social workers, and the medical personnel in Rhode Island have been interested in the problem for some time. We started a public campaign in our community about 2 years before we started the Federal program, which is now almost 2 years old. As a result of the interest displayed by various groups, we organized the Children's Heart Association of Rhode Island, which consists of medical men, nurses, social-service workers, and lay people in all walks of life. The clergy is represented, too. One of the first things we did was to interest the editor of our most influential newspaper, *The Providence Journal,* who designated one of his staff to cover all our activities. Consequently, we have had excellent publicity. When the possibility of a Federal program developed, we were in a position to do something about it.

We had several problems to face at first. The major problem was to get the State medical society to allow a Federal program to be developed in the State. The State medical society frowned upon the idea because it felt a Federal program would interfere with its prerogatives. However, because of the fact that we already had an existing agency, the Children's Health Association, which included members of the medical society and of the local academy of pediatrics on its board, it wasn't difficult to get the State medical society to realize that through the program additional medical service would be made available to the community.

As a result, we now have the full cooperation of the State medical society as well as of all the other medical societies.

MR. LINCK. Dr. Smith from Utah, I wonder if you would tell us what you would do differently if you were starting again, and just what criticism you might make of your own program?

DR. EUGENE SMITH. I do not know just what I would do differently because, although we have been going on for about 2 years, our program is still in process of development. There is one important point that Dr. Eliot stressed to us once when she was in Utah, and that is, that we must educate people to demand adequate medical service, and in the development of our program, we must take their demands fully into account. Various organizations can help, of course, in educating the public, but canvassing for outside help has its limits.

One very important aspect hasn't been brought out yet—the political aspect. I had a little talk with my senator this morning as to what we were going to do, and his remark was: "The trouble is,when we try to get these things done, the medical profession stymies us at every turn. It is getting quite discouraging." We should give some attention to that phase of our problem. Actually, I don't believe the medical profession is really trying to curtail this sort of thing as much as those on the outside seem to think. I believe if we took back to our medical men some idea of what this is all about, what these agencies are trying to do, they might be more willing to help us.

MR. LINCK. Thank you, Dr. Smith.

I should have stopped some of our earlier speakers sooner and saved some time for the later speakers. We want some time for discussion not only from State directors but also from those in the field of medical-social service and public-health nursing. I am afraid we are not going to be able to do justice to the rest of the programs that are already operating—Virgina, Connecticut, the District of Columbia, Iowa, Washington.

[Short recess.]

MR. LINCK. The floor is open to questions and discussions. I might remind you that we were concerned not only with what States would do differently if they were beginning programs at this time but also what might be suggested to the Children's Bureau, if anything, with reference to modification of its policy. I am sure Dr. Eliot, Dr. Van Horn, and other members of the Bureau staff are very much interested in knowing what you who are out in the field think about some of the policies set up by the Bureau with respect to the rheumatic-fever programs.

DR. MILLS. I have a question to ask those States that serve a larger area than we do. Do they have State and local funds to use in their programs in addition to Federal funds? The financing of our program is confined entirely to Federal funds.

MR. LINCK. That is an excellent question. It has considerable bearing on where these rheumatic-fever programs are going. It is certainly true that the programs financed entirely with Federal funds have to look ultimately to other sources for funds in order to expand. Will one of the other State directors attempt to answer the question?

DR. HALL. We have an agreement with the hospital by which 10 beds are financed by this program and a number of other beds for children with rheumatic fever are maintained by the hospital, which is supported by the State. In addition, counties may pay for patients who are committed to the hospital.

DR. GALVIN. We have available in the city of Richmond city funds for the hospitalization of acutely ill patients who live within the city limits.

DR. ROGERS. Our program is conducted just as our crippled children's program is, with county provision for the care of children who are hospitalized.

DR. MACEWEN. In Iowa we have a State appropriation of a million dollars a year, prorated to all counties, for indigent service, including crippled children's service and service to cardiac children. When the quota is exhausted, the county may send as many additional cases at the same rate paid for directly by county funds; so we have county funds, State funds, and Federal funds available for our program.

MR. LINCK. Mr. Powell, when your program is in operation, will you have funds other than Federal?

MR. POWELL. Yes, Wisconsin for nearly 30 years has made appropriations of funds for crippled children. We use no Federal funds for the hospitalization

of crippled children, including those with rheumatic fever. Our hospitalization funds are furnished half by the counties and half by the State.

DR. KOBES. The State of Maine also has State appropriations for hospital patients.

DR. FRENCH. In addition to the crippled children's funds we have county money, State money, and 7 or 8 thousand dollars from private sources.

MR. LINCK. I guess that answers your question, Dr. Mills.

DELEGATE. How about age limitation?

MR. LINCK. Dr. Cooperstock from Michigan.

DR. COOPERSTOCK. Our statutes include crippled children up to 21 years of age.

DELEGATE. What is the general opinion as to the best age period?

DR. MILLS. We include children up to 21 years under our rheumatic-fever program.

DR. GALVIN. We take children with first attacks up to 16 years of age and continue their care up to 21 years. If we find a 17-year-old child with a first attack, we might take him too.

DR. SPEKTER. I had asked Dr. Jones that very question because I wonder how many children actually need be followed after the age of 16 or 18 years. I think it best that Dr. Jones answer that in his own words.

DR. JONES. I think that the major load of care will come up to and through adolescence but one sees just enough rheumatic fever in the late teens to realize that it would be rather foolish to limit the program to the lower age group unless one absolutely has to. The heaviest amount of care that is given to any individual will be given when he is a child, but he should not be neglected later; he ought to be seen perhaps once or twice a year.

DR. ELIOT. Selective Service experience certainly has shown that.

DR. COOPERSTOCK. I have recently been asked to reexamine all the young men from my rural district whose military service has been deferred because of heart disease, with a view to appraising their condition and possibly turning a certain number of them back to Selective Service. A fairly large number of them have rheumatic heart disease and yet never realized that they had such a condition. I wonder if that offers a fertile field for further investigation.

MR. LINCK. Is there a volunteer to answer that question?

DR. JONES. It seems to me that the States that are equipped to do rehabilitation work could, without a tremendous expenditure of funds, do a great deal for the group that has been deferred by Selective Service. That brings up another question that I think ought to be brought to the attention of everyone here. As has been stressed, the Army and Navy have a tremendous volume of rheumatic fever at the present time, a volume that will probably increase until the war is over. During the last war there were, as Commander Coburn said, about 24,000 cases of rheumatic fever and there were some 31,000 cases of general arthritis that were never classified—no one knows how many of those were cases of rheumatic fever. I am well aware of the fact that there must be tremendous administrative difficulties in handling post-war problems such as these and that the Veterans' Administration is set up to handle them, not only in relation to medical and hospital care but also in relation to compensation. It would seem to me, nevertheless, that those men who could legally come under these programs would gain a great deal by supervision under the State rheumatic-fever programs. So far as I know the Veterans' Administration has never had an organized program for men with rheumatic fever and heart disease. Therefore, I think that if arrangements could be made with the Veterans' Administration about accepting some of the responsibility, social and medical, for these young men, it would be a very valuable service.

MR. LINCK. I wonder if Mr. Lord wouldn't like to comment on the relationship between the medical care and the special education of these rheumatic patients.

MR. LORD. I can't help but feel the educational principles that operate here are fairly simple. The basic need is to promote intelligent understanding of the needs of the child on the part of all those who are going to deal with him. The doctors do an excellent job of interpreting the child to the parents but they often are not quite so close to the school. I feel that if the doctor can somehow or other interpret the needs of the child to the school, the school will be receptive toward providing the kind of program necessary. I am certain a little personal contact here and there by way of bringing the school people into your clinic would eventually help a great deal. We might as well face the fact that school personnel in general is very ignorant of the needs of the rheumatic child. We must follow up on the cases individually if the child is to get the care in school that he should have.

I don't want to enter into the controversy here as to whether the rheumatic child should be provided for in a special class or in a regular class. I don't see much point in any argument on administrative details here. There aren't very many special classes throughout the country, probably very few good special classes. Seldom have special classes ever done what they were intended to do; seldom have the teachers in charge been trained sufficiently. I think we should keep our eyes on the *needs* of the individual child; if he needs special-class teaching and if this can be arranged administratively, all right. But primarily the needs of the individual child must somehow or other be pointed out to the school officials so that they can be met.

MR. LINCK. With respect to Mr. Lord's remarks, we ought not to forget that the teachers of special education are in many communities organized into local chapters of the International Council for Exceptional Children, and through such organization are in a position, I believe, to help materially those who are responsible for the establishment and continued effective maintenance of programs for children with rheumatic fever. In such activities as public education, legislative activity, and so on, I have found them particularly helpful. They, like other local chapters or groups, such as the State societies for crippled children and the heart associations, might be brought in to strengthen the fundamental public-relations base. Would any State like to comment on aid to the program obtained from State societies for crippled children, heart associations, or other private agencies?

Miss Giusti is a medical-social worker. Do you have some comment to make on that point?

MISS GIUSTI. In Rhode Island we have, in the Children's Heart Association, the Bluebird Club. Many of our cardiac patients are members of this club; children from other agencies belong, too. We don't have a State crippled children's society of any kind, but we have used all the other agencies in the community that would be interested in the rheumatic-fever child.

MR. LINCK. I have the feeling it would be unfortunate if the overlapping of interests were not capitalized on. I wonder, Mr. Turner, if you are in a position to comment on that with reference to any of the States. Certainly the National Society recognizes the cardiac child as a crippled child within its definition, isn't that true?

MR. TURNER. I represent the National Society for Crippled Children. Most of our affiliated State organizations are called societies for crippled children, or perhaps societies for the crippled, or societies for the disabled. Quite naturally, speaking from my viewpoint, I should like to call to the attention of the

official agencies working for crippled and handicapped children that the voluntary groups offer a potential source of energy to make their programs effective, one which they should not overlook. Because the definition of a crippled child has varied considerably from State to State, community to community, and time to time, many voluntary organizations have grown up more or less like Topsy, and I need not remind you that there is a tremendous variety of them. Admittedly, all the many organizations working in the various fields for the physically handicapped are making splendid contributions. Even so, it is inevitable, I suppose, that there should be some duplication.

As I was listening to the discussion this morning, I heard a long list of specialties mentioned which are all involved in the program for care of patients with rheumatic fever. This, added to the complexity of the organization problem, means that there is much to be said for coordination which we won't have time to take up here.

In its own modest way, the National Society for Crippled Children has been doing whatever it can to clarify these problems for the public and to make for better working relations between all organizations, both voluntary and official. We have conducted a rather extensive program of "area institutes," at which representatives of all the various State agencies and private agencies concerned with the problem of the handicapped child are invited to sit together and listen to one another explain what their part in the program is.

The National Society has also tried to conduct its own program in the manner best calculated to do the things that needed doing and to avoid those that have already been done.

I know I am taking up a great deal of time, but it seems to me that we have to have that background to understand the problem of educating the public and the problem of State and community coordination. There are various ways of getting coordination, and I think the lay organization is an excellent one to build upon. For example, we have had a great deal of success in organizing what are probably erroneously called "area institutes"—that is to say, in a certain region representatives of all the various State agencies and private agencies that might touch upon the problem of the cardiac child or the crippled child or any other type of physically handicapped child are invited to sit together and listen to one another explain what part they have in the program. They get together and learn to know one another's program and they do learn to pull together. The crippled children's societies, in general, have been pulled into the rheumatic-heart program rather than getting into it deliberately. In many of the States that have been mentioned here these societies have been used because there was no other organization around to use, and they seemed to be most deeply concerned with the problem.

MR. LORD. My remarks were apparently interpreted to mean that I am opposed to special classes. I make my living by training teachers to conduct such classes. But I do feel very strongly that it is a mistake to argue over administrative detail. You might put the child in the regular class, and when the other fellows go to gym, let him go to his cot to rest. But it is possible that isolation may have a worse effect on him psychologically than being in a special class. I can't tell. I believe many factors have to be considered. So let's not argue about the details but get the information to the teacher and make sure that somebody there understands the child and gives him what he needs.

I should be glad for a special class, but I can see many cases in which it is not necessary and probably is not desirable. Talk about what the child needs and don't talk and argue about the administrative set-up necessary to give it,

because, after all, a great variety of needs must be met and perhaps several administrative plans may be equally successful.

MR. LINCK. We have not considered the nursing aspects at all today. Have you something to say on this topic, Miss Taylor?

MISS TAYLOR. I think our basic structure for the administration of public-health nursing is quite adequate and we should consider service to children with rheumatic fever simply as a broadening of the total program. Our basic program includes care of well children and sick children.

Miss Langdon from Connecticut and Miss Hiller from Maine can perhaps contribute something to the discussion.

MISS LANGDON. In order to improve the quality of service in the rheumatic-fever program, we have to stress the work our supervisory staff must do in giving the local nurses as much help as possible. The nurse going out into the home has responsibility for advising on many aspects of the child's care, such as proper environment, recreation, and education. The nurse must not only think about all this, but must also think about who is going to help her in meeting the over-all needs of the children. Services for any of these children require teamwork, and we all have to be very clear about what our part is.

MR. LINCK. Miss Hiller, from Maine?

MISS HILLER. We feel that if we had to start the program over again, we would begin with a good educational program and a well-prepared staff. The preparation of the staff should begin in the nursing school. Miss Jordan mentioned the contribution that the nurses in a convalescent home can make to the educational program.

MISS LANGDON. May I make one request of the medical profession—that it assist the nurse to be a good observer and good reporter? I think that is what medical men want of the public-health nurse almost more than anything else, and it is one of our most important contributions. We all fall down at times in this. If there is anything the medical men want to say about that matter, I think it would be very helpful to us.

MR. LINCK. Miss Trauba, nursing supervisor in the Illinois program, do you have questions?

MISS TRAUBA. I wonder what the medical profession thinks is the most important function of the public-health nurse in the crippled children's program. Where do they want us to put the emphasis?

DR. GALVIN. I think we expect the nurse to be an octopus; we expect her to be a case finder and careful observer and we like her to do regular nursing demonstration and some actual bedside nursing. We believe in a good generalized nursing program. We like that. We should like to have it in our own State and community. We have stressed the fact that we have to work with four different groups of nurses. I hope we shall some day have a generalized nursing program.

MISS NICHOLSON. I have observed in the rheumatic-fever programs that the clinicians are making fuller recommendations than are usually made in some of the other programs. Public-health nursing, like other forms of nursing service, can best be rendered when the nurses know what services the clinician wants his patients to have. Obtaining this information has long been a problem; the physicians have not shared with us full information as to what they would like to have done. I am glad to say that in the few rheumatic-fever programs I have observed, we seem to have made greater progress with this point than in some of the other programs.

MR. LINCK. Any others? Medical-social workers are singularly silent this morning. Miss Bartlett, have you something to say?

MISS BARTLETT. I have one comment on this matter of coordination of resources—particularly medical and social resources—based on observation of programs in various parts of the country. It has seemed to me there are several stages in the development of a new program. First we try to educate the community and ourselves. At this stage of planning we analyze the situation to find what services are available to supplement our program. Then we test our plan through actual cases and we develop our working relationships with the other agencies. While the program is still new, it is important that there should be a third step, namely, an evaluation of the program as a whole. At this stage we review the situation to decide what responsibilities each agency can appropriately accept, what gaps remain unfilled, and how far the policies and procedures can be crystallized without becoming rigid. Since there is no particular circumstance that presses us to this third step, we do not always take it and thereby lose clarity in our program in later years.

MR. LINCK. Are there any other comments from medical-social workers?

MISS BANKER. I don't believe our experience in the rheumatic-fever program has been very different from that in the crippled children's program. We have looked on this program as offering an opportunity to know the individual children and their social needs a little more intimately and also to explore local resources in limited areas more exhaustively. The medical-social group met last night and reviewed the medical-social workers' activities in these programs with particular reference to the building up of resources in the communities to which the children were to return after care in clinic or hospital or sanatorium had been completed. It seemed to us that possibly at this time when the case loads of welfare agencies are reduced because of increasing employment opportunities, there might be a chance for us to reemphasize with the welfare groups the contribution they can make in the care of handicapped children, with the interpretation and help that we can give to them.

MR. LINCK. Have other medical-social workers pertinent comments or questions? If not, I am going to close this part of the meeting by expressing my personal appreciation of your very generous participation in what to me has been a very stimulating and provocative discussion.

[The meeting was adjourned at 12:45 o'clock to reconvene at 2.]

THURSDAY, OCTOBER 7, 1943—AFTERNOON SESSION

FURTHER DEVELOPMENT OF PROGRAMS FOR CHILDREN WITH RHEUMATIC FEVER

DR. ELIOT. This is the final session of this conference and I don't intend that it shall be too long. You have had 2½ very busy days. I hope that at this point we can attempt to pull things together a little bit. We don't wish to have you go away with a feeling of complete confusion. On the other hand, I should be very glad if you would go away feeling that the job is not yet accomplished. This is the first of a series of conferences that I hope we shall be able to call from time to time. Other kinds of conferences may be called on rheumatic fever in children. We have no short road ahead of us. We have a long row to hoe and you are the people who have begun to hoe it.

We want to get direction as a result of this conference in what we are trying to do. I think many of you probably want to know a little more what the pat-

tern may be for the near future or the more remote future. Certain questions can be asked and answered, at least in part, this afternoon. Many of you have ideas as to what is needed to stimulate this program, what is needed to get care to more children, and what is needed to arouse the interest of the public, so that care will be forthcoming and services can be provided.

I shall follow the agenda more or less. Last evening as I was thinking about this session I found myself writing a whole new series of questions. What I want very much is that you people take a long view this afternoon. But no long view is worth while unless one has a short view first. What are we going to do next and where do those next steps lead us during the coming 2 or 3 years? I won't ask you to go beyond that, but sooner or later I will, because we have to think in terms of what we will do in this program in, say, 10 years.

We ought to consider what we really want to accomplish in an expanded program. We have to think in terms of what can be done about prevention, what can be done about prompt control of early cases, what can be done about adequate treatment of those that have gone beyond the earliest stages. We certainly need to think about what steps can be taken now to spread care within the States where the program is started. Some of you come from States where there is no program and are thinking about what you can do in your States. There are many other States not represented here that must also be thinking about what should be done.

In considering all this, probably the first thing that comes to your minds is your responsibility for programs financed through State and Federal and local funds or personnel. You wonder where the funds are coming from to expand your services. I ask you, first, Is there need for expansion? I will come back to that again. Then I very much want the group of National organizations represented here this afternoon to discuss what should be done to create better understanding among the public. What can the National organizations do to help us—and by *us* I mean the State workers and the Children's Bureau combined in this joint undertaking of ours. What steps really are needed to spread information, to make the public fully aware of what this disease means to children. Most people are wholly aware of what infantile paralysis means. But I think the public is not so wholly aware of what rheumatic fever means.

Now I am going to go back to the topics that have been set out for us and we shall follow them, in general. I assure you we won't spend too long discussing any one, but I do want free expression of opinion, and if anybody has anything on his mind about any phase of the total program, I hope it surely will come out this afternoon.

Is There Need for Expansion of State Programs?

DR. ELIOT. To go back to the question of expansion, do we need to expand? Would anybody like to open the discussion of that particular subject? What about the State groups? Are they satisfied with what they are doing at the present time?

DR. MILLS. It is obvious to all of us, I think, that we must expand the program. In California with only 200,000 people covered by this program out of a population of 8 million, no question exists in our minds but that the program needs to be expanded.

DR. HALL. We are covering a wide territory in Oklahoma, but we do feel there is room for more concentrated effort.

DR. ELIOT. With greater resources, more personnel, more facilities, you really could do a better job. Is there any disagreement on the point?

DR. OPPENHEIMER. I realize in the District of Columbia we cover a very small area; we really have a local program. But we feel very strongly that the program needs expansion in order to take care more adequately of the adolescent group touched upon this morning. Here in Washington we have a number of cases of individuals with rheumatic fever who need long-time care, who fall within the age group of 14 to 19 or 20. We have had very serious difficulty in attempting to provide long-time institutional care for this group in the same place with the younger group. We feel strongly that something needs to be done about this aspect of the program.

DR. ELIOT. You would like to see expansion facilities for this age group in your program. Other comments on this particular phase of our subject?

DR. HUSE. I think Dr. Taussig pointed out yesterday the need that exists in Maryland, and I think it exists in other States too, for facilities for Negro children.

DR. ELIOT. That line of expansion I think there is no doubt about.

DR. GALVIN. I wish to cite, by way of example, the fact that we started our program in 1 city and in the adjacent county. As we worked, surrounding counties became aware of the program, and so many applications dribbled in that we expanded to 9 counties. Out of 100 counties we have had to turn down many.

DR. ELIOT. Are you satisfied that you are doing as intensive a job within your own area already as you would like to do?

DR. GALVIN. I am never satisfied.

DR. ELIOT. But the Social Security Act talks about extending and improving both the crippled children's program and the maternal and child-health program, and true expansion is a combination of those two aspects. You extend and you improve—that is the heart of the expanding process. Sometimes it is an expansion in the form of personnel; sometimes it is a reaching out into new territory. I am glad Dr. Huse brought up the question of the needs of Negro children. Mrs. Staupers, would you want to say anything on that point? You are concerned, I know.

MRS. STAUPERS. I am glad that the members of the conference are concerned. We have one young woman in that field. We are keeping our eyes and ears open and when you are ready to have trained personnel, my job will be to find the people.

DR. ELIOT. Mrs. Staupers represents the National Association of Colored Graduate Nurses.

Now if we are going to expand, obviously we need several resources: We need money, we need personnel, we need facilities. If funds are to be made available to meet the need, first and foremost we must know what the need is, whether this information comes from National organizations, from State groups, or from any other source. Information with respect to need is essential, so bear that in mind. As you do your work from week to week and month to month, when you find evidence of need, send it in to us; send us any stories that you may have; give us the information that shows that your program is not reaching all the groups that it ought to reach; give us the information that shows where you want to expand territorially, where you want to expand from the point of view of service facilities. Can you all produce information for me when I ask you for it? I warn you, you will have to do it. That is the way in which we shall progress, by your telling us what your problems are, what your needs are.

Let us go on now to the next subject: We assume that we are going to expand, that we are going to improve. Now, if so, how can we do it? The first

topic is: What are the best ways of educating the following groups with respect to the need for expansion and for development of the program in general? The first general group is the public, because, after all, that is probably the most important group to educate. It is the fathers and mothers of the children; it is the people in the community who are responsible for developing local interest; it is the people who represent the public who will really help us turn this trick.

I should like to hear from a number of the national organizations in connection with this. Is Dr. Hotopp here? She is chairman of the child-health committee of the Parent-Teachers Association.

Educating the Public About Rheumatic Fever

Dr. HOTOPP. This group can really do a great deal for you because its members are health-conscious and because they are to be found in almost every community. I think eventually there will be many more of them and they will be much better organized than they are at present. The help they have already given in certain communities shows what they can do. They can do a great deal more when they are encouraged to do it. They can help educate lay groups through the PTA study groups. They can also be of great service as volunteers. I happen to be very fond of volunteers myself because they do so much for me in my welfare conferences—I find them very useful in the clinics. They can also be used to go into the homes, under the supervision of trained workers, to do some occupational therapy. Right now a great many of the groups have money—not a great deal, but several hundred dollars. Perhaps if you need extra things for bed work, tables, and things of that type, they may be able to supply them. I shall go back and suggest to the parent-teacher group all the things they might do.

Dr. ELIOT. Has this group responsibility for giving the parent-teacher group real information about rheumatic fever? I am interested in making all that great membership of 2½ million people well informed on the subject.

Dr. HOTOPP. I think it is very easy to do so. The National Congress sends information to its chairmen or to its State presidents, and they in turn send it on to local groups, so anything that goes in at the top comes out at the bottom.

Dr. ELIOT. What do you do at the State level to start at the top and reach everybody in your State?

Dr. HOTOPP. The chairmen are supposed to distribute the material through their groups. In addition, a new publication is coming out that will go to a great many of the local groups, and its messages will be very widely circulated.

Dr. ELIOT. Do your State officials use the PTA channels to inform the public about this disease?

Dr. HOTOPP. I don't think a great deal has been done along that line to date. It is a perfectly good channel to use, however.

Dr. ELIOT. A very excellent one, too, and it reaches the parents of the children in the age group we want to reach. I should like to hear, too, from that old association that has been in existence, I learned this noon, for some 20 or 25 years, the American Heart Association. Miss Matheson represents the association here. How do you reach the public, Miss Matheson?

Miss MATHESON. I think I should preface my remarks by saying that I am not a member of the staff of the American Heart Association. Dr. Marvin regretted very much that at the last minute he was unable to attend this important session. My role is that of reporter and I shall endeavor to give him a complete account of these proceedings when I return. I am sure he will feel that a great deal is

being accomplished. I am really overwhelmed at the amount of work being done throughout the country, of which I am sure very few people have had any knowledge. I know that Dr. Marvin will want me to say that the American Heart Association stands ready to be of service to the States and that the local heart associations scattered from California to New England will also be glad to be of service in the State programs. I am sure that most of the workers here are familiar with the publications of the American Heart Association and of its affiliated local heart associations.

DR. ELIOT. I am sorry that we do not have representatives of each of the local or State heart associations. Originally we had hoped to be able to invite each one to send a representative, but the Office of Defense Transportation is firm about how many people may be invited to a conference, so we had to keep our travel list under 100.

I know Dr. McCulloch has long had interest in the heart association. What about this question of the means the heart association has of reaching the public on this subject?

DR. MCCULLOCH. The American Heart Association has long been interested in the problem of rheumatic fever and of the care of the child who has it. This interest may have been one of the prime motives in the founding of the association. The organization came into existence about the time prevention was the main watchword in any public-health program against rheumatic fever. Emphasis on prevention has decreased since then because of our lack of knowledge of definite ways of preventing the disease.

The association has in the past stimulated interest on the part of the general public through the issuance of various types of publications describing rheumatic fever, both periodic publications and occasional leaflets, that could be used by lay groups or by individuals who have rheumatic fever.

MRS. STAUPERS. As a member of the National Council of Negro Women I should like the group to remember when it needs help in educating our Negro mothers that we do have local councils; we have an office here at 1318 Vermont Ave., Northwest, with an executive secretary in charge. Our membership includes a cross section of Negro women, not just professional and educational groups, but mothers' groups, church groups, and others. We believe the National Council of Negro Women will be very helpful to you when you need the cooperation of the Negro public.

DR. ELIOT. Does that group have State groups?

MRS. STAUPERS. State and local councils.

DR. ELIOT. Another large organization has a very great interest in this question of educating the public, and I want to hear from Dr. Wheatley as to what the Metropolitan Life Insurance campaign is doing in this field.

DR. WHEATLEY. Naturally we do have an interest in this important problem. For some years rheumatic fever has been the subject at least once a year of a Company advertisement in national magazines. More recently we have developed a printed leaflet on rheumatic fever, which has been widely distributed by our agents to policyholders and by official and other voluntary public-health agencies to many thousands of individuals in this country. We are working on a sound-film strip for lay-education purposes, which will be ready in the fall of 1944. Our literature has been prepared with the active cooperation of such agencies as the American Heart Association, the Academy of Pediatrics, the Children's Bureau, and United States Public Health Service.

What I should particularly like to tell you is that in your own communities the representatives of the Metropolitan would be interested in cooperating with you. We have found it possible through the years to interest our local man-

agers and their agents in the various educational activities that the Company has undertaken, dating back to typhoid fever, pneumonia, appendicitis, and various other important health problems. They have participated in this rheumatic-fever educational program by distributing literature, by obtaining press releases in their own communities, and by arranging for talks at their service clubs. I am sure you would find many of these men in your communities—representative businessmen—interested in rheumatic fever and would possibly be able to render some help in developing local community interest. To carry the public along with your efforts is, as has been said here before, one of the fundamental problems you have to deal with.

The local physicians have to be carried along, too; they should not be left behind but should be in the forefront of this educational activity. The Metropolitan has also developed a clinical booklet for physicians, which through the cooperation of State medical societies and county medical societies has been distributed to physicians throughout the country. I believe about 40,000 physicians have been reached in this way.

We are interested in having your suggestions as to possible material of a kind (exhibits, leaflets, and other visual aids) that would be helpful in carrying on an educational program.

DR. ELIOT. I am glad Dr. Wheatley has brought out the question of the education of the public through the various channels of magazines, radio, films, and so on. I think it is a most important part of the total program, for if we are going to educate people today, we have to use the methods that are at hand. That whole phase of the program has been left out of this particular conference. We shall have to deal with it at another meeting when we reach the point where we can proceed to an expanded program.

Some months ago we in the Children's Bureau had a visit from two members of the Irvington House board, Mr. William Irle and Mrs. Edwin Koehler. They were invited as special guests to this conference, and although Mr. Irle had to leave yesterday, he told me of his great interest in what we were discussing and what we were doing. I should like to ask Mrs. Koehler to tell us something of her ideas with respect to the spreading of the gospel throughout the country on the subject of rheumatic fever.

MRS. KOEHLER. I am very grateful for being invited here today. I think I speak for Mr. Irle as well as myself when I say that being here has been a thrill to us both. As a lay person, I have been interested and active in work on rheumatic fever for 20 years. As a result I have become more and more conscious of the fact that if we are to accomplish anything—and in my field of endeavor, this means raising money to keep an institution going as well as trying to run the institution in the most up-to-date manner—the public must be educated about this disease. After 20 years of effort, I can't tell you how many people we have run up against who have never heard of rheumatic fever. I am talking of New York City and the surrounding counties.

One of our past efforts was the organization of an international broadcast on rheumatic heart disease, sponsored by the American Heart Association. That was 5 or 6 years ago. It was a national scheme to try to interest more of the people all over the country. Following that, local heart associations presented local radio programs, as many as could be arranged. A few years after that we got the March of Time to devote a section of its monthly program to rheumatic heart disease. We have also tried to arouse the interest of various national magazines, and Life did give us space about a year ago. Nevertheless, in spite of all the effort that we, as one lay organization, have made to arouse interest in rheumatic fever, we have achieved very few results.

I know of a group in New York City who feel that they would like to combine their efforts in a coordinated endeavor with the grand work you are doing, so that we might work together and complement one another's services rather than compete in any way. There is another group that has felt it would be a very good thing to have some sort of clearing house for medical research projects in this field.

With these ideas in mind, what would you people think of the possibility of a lay national foundation on rheumatic heart disease? The purpose of that foundation would be to plan nationally and to raise funds that might be used for medical research, for public education, and, certainly part of them, for care in local communities. We thought also that such a group might be helpful in legislative matters, acting as a pressure group wherever there is a need for one.

DR. ELIOT. Thank you, Mrs. Koehler. I wanted you, as a group of State workers, to be cognizant of all these ideas and to be considering the real significance of what State groups and National groups of well-informed individuals can do to put forward the public program in which we are engaged. This is probably the appropriate moment for us to ask Dr. Gudakunst to make some comments. He has had real experience in learning what an organization can do to stimulate public interest in a disease, and though the disease concerned was not the one we are discussing today, nevertheless the method is one that he can explain as probably no one else could.

DR. GUDAKUNST. You will notice I sat quietly for 2½ days. I have done that deliberately because I haven't had anything to say. I have been here to learn and I have learned much. In infantile paralysis we have a quite comparable problem. We have a disease the cause of which is somewhat obscure and the treatment for which is somewhat—well . . . Like rheumatic fever, it is a disease that calls for many long months of hospitalization, care being administered by comparatively few highly specialized, highly skilled individuals. When you speak of the problems of rheumatic fever and heart disease, you are talking of the same problems that confront us in dealing with infantile paralysis.

We have learned one or two things. We have learned that there is interest in these medical problems on the part of the public. We have learned that this public interest can be directed toward and translated into service programs. I grant you that the picture of the crippled child has somewhat greater eye appeal than the picture of the child with heart disease, but it certainly has no greater emotional appeal to the heartstrings or purse strings of the public. I have been very much concerned about the fact that we have not had, long before this, some national movement on a solid, widespread basis for the care of rheumatic heart disease and for the study of the problems involved therein. We have all the natural elements working for us—public interest, a corps of people with professional training. You don't need a lot more. Here is a prosperous public with plenty of money, willing to give to a cause that is worth while.

I have been interested in rheumatic heart disease as a public problem in all my public-health career, but I have never had wits enough to think of it as anything more than Johnny's or Susie's problem. I never thought of it as a national problem. I though of it only as a provincial thing and I think we all approached it in much the same way in our home community; whether public-health officers, nurses, or whatever—we were all thinking of it as our own local problem. We owe a great deal to this agency, the Children's Bureau, for giving us a chance to think of it in terms of a national problem and for setting in operation machinery for its solution. The fact is you have not gone too far; you haven't solved it. I listened to the discussion this morning and learned that relatively few counties in all the United States and relatively few cities have an intensive program.

You haven't solved it, but certainly, Dr. Eliot, you and your associates have started something worth while and I ask only the opportunity of helping you.

DR. ELIOT. I think one or two other national organizations are represented here and I should like to have them give us a word. Miss Strachan of the National Tuberculosis Association.

MISS STRACHAN. I have been struck all along with the comparability of the rheumatic-fever problem and the tuberculosis problem. It seems to me our associations all over the country can be of service in a number of ways. Years ago many of our associations supported preventoria for the care of children who we used to think were "pretuberculous." Some associations still support summer camps and open-air classes. However, as our knowledge of tuberculosis has increased, we realize that such regimen, valuable as it is, does not prevent tuberculosis. In some places, these preventoria, summer camps, and special classes might very well be turned over to serve the cause of rheumatic fever. Of course, we do have to bear in mind one thing, and that is that many new cases of tuberculosis are being uncovered and many States still do not have adequate bed capacity for care of the patients who need hospitalization. Only 14 States now have what we consider adequate bed capacity. The others still need more beds for tuberculosis, and in certain places these preventoria may need to be utilized for the care of adult cases of tuberculosis.

Certainly I can assure you that our tuberculosis associations, State and local, all over the country are interested in child welfare and in building better health for children. If you will make use of these associations in your particular localities, you will find that many times they can be of real service. When the Metropolitan Life Insurance Co. published its leaflet on rheumatic fever last spring, we were very happy to send copies of it to all our associations, and we certainly shall be glad to see to it that our tuberculosis workers, at least, are kept informed about the advances in the rheumatic-fever field.

DR. ELIOT. We have an old friend here, Mr. Howett, who represented the crippled children's association in the old days and is here today as a representative of the National Council on Rehabilitation. Have you a word, Mr. Howett, in connection with this matter of publicity?

MR. HOWETT. I am sure you can count on the National Society for Crippled Children to do anything and everything it can to help to get this information to the public through its magazine and bulletin and the bulletins and other publications of its affiliated State societies and to cooperate with State services for crippled children through its affiliated societies. When the proper time comes, our agencies will assist in obtaining State appropriations for the furtherance of this program.

The National Council on Rehabilitation is a new organization, a federation of more than 40 national agencies interested in all types of handicapped persons. It will be able to cooperate and assist in the promotion of a national program for children and other persons with rheumatic fever. Its news bulletin reaches every part of the country through the affiliated units of the federated agencies.

DR. ELIOT. The representatives of several other national organizations have already spoken. There is Mr. Turner of the National Society, Dr. Stevenson of the National Mental Hygiene Committee, and Mrs. Gordon of the Child Welfare League. Have I overlooked any representatives of other national organizations?

DR. RUTSTEIN. There is danger in telling a mother that a child with growing pains may have rheumatic fever when there are no medical facilities in the area to determine whether or not the child actually has rheumatic fever. I think

that lay education at first should be limited to that necessary to develop community support for a program and, later, education of the public in the signs and symptoms of the disease should be carried on in order that patients may be brought under medical care at the earliest possible moment. It is not right to worry mothers and children about rheumatic disease unless there are facilities in the locality to determine whether or not disease is present.

DR. ELIOT. I am terribly glad you brought that point out because when we started the crippled children's program back in '35 and '36 people all over the country wanted to make surveys to find all the crippled children. We knew we didn't have money enough to meet the need and so we put the soft pedal on surveys that would only have turned up thousands of children. I think that is the same point you are making now about this particular phase of the program. I am sure it is a wise policy to avoid disturbing parents and children until provision can be made to help them.

DR. ROGERS. Since we have entered on controversial issues, at the risk of being misunderstood, I should like to continue on this subject. The task of educating the public is one for which I have great enthusiasm, but at the same time it presents a problem for which I have acquired the utmost respect. Public opinion is a very useful servant to a good cause but can also be a very violent master.

If we are to arouse public opinion, I think we should decide very carefully to what end we are trying to arouse it. If we are trying to arouse public support for organized enterprise at the levels of Federal, State, and local government, or support of existing community agencies that can and should be integrated—that is one thing. But there is a real risk in arousing public opinion about anything as appealing to the public as this particular subject is, a real risk that it may get out of hand. We have seen that happen in the past. We had a veterans' organization whose leaders were emotionally identified with the problem through cases in their own families. They wanted to initiate all kinds of fund-raising proceedings and did. They had no trouble in raising funds. Our principal problem was to convince them that they ought to use the money they raised to support already existing enterprises in their community—more specifically, to employ a medical-social worker for existing clinic services and not to set up a brand-new organization, actually in competition with existing facilities. Such uncontrolled enthusiasm frequently competes with itself in this way.

The point that Dr. Rutstein has raised is certainly a good one—parents can be unduly alarmed. I think all of us who have children of our own wonder whether or not they are getting rheumatic fever; they run the gamut of minor rheumatic symptoms every few months. To overemphasize those symptoms publicly might be harmful.

As to the suggestion made about a national organization—I think an organization of that sort would be a splendid thing. A great deal could be accomplished because, by getting everything unified at the start, a lot of local enterprises and agencies could be prevented from competing with one another. I should like, however, to ask this one question: Since so many national organizations are competing for public interest and funds, would it not be possible to have these interests combined in a single strong organization, interested in the total problem of the physically handicapped child, with administrative committees with special interests?

DR. ELIOT. Thank you so much. I think we probably ought to move on from the subject of the education of the public, but before we do, if the State directors and other State representatives here have other comments to make on this part of the program, I should like to hear from them.

DELEGATE. One of the most potent ways we have of reaching the public is by something that appeals to the eye. Moving pictures are particularly valuable in bringing before the public any subject that we wish to put across. We can hand out pamphlets by the thousand and only a fraction of them will be read; we can lead the people to the reading matter, but we can't make them read it. But groups are always interested in moving pictures. I was very much surprised to find, a month or two ago, in casting about for a moving picture about rheumatic fever to present to lay groups, that none are available. Some valuable material could be brought before the public in a very entertaining way if an interesting moving picture with good scientific background could be made available for presentation to lay groups such as the parent-teacher organizations.

DR. ELIOT. Thank you.

Miss Lenroot has just come in. I want her to say a word to the conference before we go further.

MISS LENROOT. Thank you, Dr. Eliot. Ladies and gentlemen, I do want to express to you my very great appreciation of your coming here in this busy time and giving us all the benefit of 3-days' participation in discussing these vitally important matters. I share the feeling of one of the recent speakers that talking together about one specific problem and one specific program—what to do for children with rheumatic heart disease—is a very significant step forward, particularly because this problem, though so very extensive, has never up to now received adequate attention. Only as we successfully tackle such specific problems of various groups of children do we finally build up toward our goal of serving all children in accordance with their needs. The possibilities of community cooperation, bringing all the forces in a community to bear on one problem such as this, are very great and will have lessons for us as we deal with other problems. We certainly feel in the Children's Bureau that the lessons we have learned in the care of the orthopedic cripples and those now developing in the care of children with heart disease and the work that has been done outside the Bureau on a Nation-wide scale, largely through private effort, with reference to tuberculosis, have very great implications for all children suffering from physical handicaps, or mental handicaps for that matter. We can look forward, in thinking of the post-war period, to a time when we shall be thinking in much broader terms of the needs of all handicapped children and shall be trying to develop services that are as rounded and as comprehensive for all types of need as those that have already been developed in some communities—at least, for children with the needs you have been discussing today.

Education of Physicians

DR. ELIOT. I want to combine the next two items: What are the best ways of educating professional groups and the professional staff, because, after all, they really are about the same. I understand Dr. Leonard from Montana has had a very interesting experience recently with education by a lay organization in the State. Don't you want to tell the whole group about it?

DR. LEONARD. In Montana the crippled children's agency has received many requests from a woman in Buttte who is the wife of a miner and has a daughter with rheumatic fever. We have been receiving requests for care for her daughter every 4 or 5 months during the past couple of years. She wanted to know why we couldn't take care of a child with rheumatic fever when we could take care of all the other crippled children in the State. We usually replied that we hadn't started a program yet but intended to start one and would let her know as soon as we did. Her husband belongs to the CIO.

Shortly after I had taken over the direction of the crippled children's program I received a visit from the CIO president. He wanted to know what I was going to do about the woman's request. So I told him we would start the program. I think our future program in Montana is the direct result of this interference because the CIO president went to the Montana State legislature and by putting a little pressure in the right place, had the wording of our appropriation changed to read that the money was to be for the use of crippled children in the State of Montana and children with rheumatic heart disease. Then he wanted to know if I had enough money for the program. He said, "If you don't have enough money, doc, I'll get it for you."

DR. ELIOT. I want to ask Dr. Bauer whether he has any contribution to make at this point. I should have called on him to discuss the subject of educating the public. I should like to know whether he has anything to say to us on the general question of educating the general practitioner.

DR. BAUER. I think the story we have just heard is a very good example of how education of the public and education of the professional groups go along hand in hand. I don't think either one should go too far ahead of the other. The point has been made that doctors probably don't learn very much about rheumatic fever until they have a specific need for the knowledge. That is a very human reaction. I don't think many of us are prone to take up Spanish, for example, unless we are going to South America. Most of us find there are so many things we would like to learn and so little opportunity to learn them that we have to choose. In the whole matter of pressure this is a very important point.

I was so incautious not so long ago as to make reference to pressure groups when a representative of one of the national health agencies felt very much slighted because a publication of the American Medical Association had given only half as much space to his particular interest as had been given to another that he regarded as a competing interest. When I pointed out to him that we have tried to give a reasonable amount of consideration to all the pressure groups in the field of public health, he became very indignant at being classified among pressure groups. I think we know there are pressure groups in public health, and many of them have exerted pressure to very good purpose.

The matter of a national foundation is a very interesting proposal. We need public support for any program, of course, but I think the speaker who pointed out the multiplicity of national organizations should be listened to with great care. If there is any way in which an enhanced public interest in rheumatic fever can be achieved without creating a new organization—if there is any way in which the interest of the American Heart Association, for example, or any other appropriate association, can be utilized—it would be a true public service to avoid the establishing of any additional agencies in the field.

As for the education of doctors, it was estimated by the president of the American Medical Association some 5 years ago that there were at that time 75,000 medical meetings every year. That includes hospital staff meetings and county medical-society meetings and city medical clubs and State meetings and interstate meetings and clinical congresses and the meeting of the American Medical Association and academies and associations of specialists; 75,000 medical meetings will give all of you ample opportunity to get a hearing. In addition to that, there are the medical publications, the Journal of the American Medical Association, the special journals published by the AMA and other publishers; the bulletins of county medical societies, many of which have considerable scientific departments. Then there are the postgraduate programs of

the State medical societies offered in cooperation with State university extension divisions. I suggest you use them all.

One more thing, I suggest that you all, beginning with the Children's Bureau and including the State organizations, if any active local groups develop, keep the medical profession informed constantly as to what you are planning to do. I hope very much that a report of this conference will be prepared by the Children's Bureau and sent to the Journal of the American Medical Association for publication in order that doctors may know what is being done and what is being thought so that they may be kept informed.

DR. ELIOT. I want Dr. Martin, who is the chairman of the committee on rheumatic fever of the American Academy of Pediatrics, to say a word as to how this particular group of medical men can be reached, what the Academy committee is planning to do, what the State pediatric groups can do, to help the State administrative people with this particular program.

DR. MARTIN. I represent a committee on rheumatic fever that has recently been appointed in the American Academy of Pediatrics. It seems to me that the American Academy of Pediatrics through its members can play a large part in carrying out this program. We have a large membership of men and women physicians, not only in this country but in Canada—and an increasing number of honorary members in South America. The latter group would be particularly interested in this conference because in South America there is a growing interest in rheumatic fever. We as a committee can work through our State chairmen throughout the country and create within the fellowship of the Academy an awareness of rheumatic fever and an increasing interest both in the diagnosis and care of these children. We would hope that this group would be an important instrument in spreading the gospel throughout other professional groups, thus creating an ever-growing concern with this very important problem.

DR. ELIOT. A number of other professional groups are represented here. I can't possibly call on all of you, but I do want to have the public-health-nursing, the institutional-nursing, and the medical-social-work group say something with respect to the education of their own membership in this problem of rheumatic fever.

Miss Stevenson, who was representing the National Organization for Public Health Nursing, has left. Will Miss Parker tell us something about the educational program going on in New York State?

Education of the Nurses

MISS PARKER. When we first started the program in New York State, we had hoped to conduct institutes throughout the State for the education of the public-health nurses. We haven't been able to cover the entire State, chiefly because of lack of medical personnel, but we have concentrated on the nurses in the area in which we have diagnostic and consultation clinics. They have a series of lectures by physicians, by the public-health nurses, and by the medical-social workers so that all aspects of care have been included in these institutes. In some of the other areas we have held conferences or small group meetings, not with the idea of introducing a new program for case finding—because we recognize that facilities for care of these children are not available—but with the idea that they already have some patients with rheumatic fever and that some help might be given to the nurse on the problems that are staring her in the face at this moment.

We had planned to develop a course in rheumatic fever for public-health nurses at the convalescent institution, and to combine it with work in the outpatient department, so that the nurses would get an idea of care in a convalescent home and follow-up care in the child's own home after he left the hospital. A university in the State that conducts a public-health-nursing course has also given some information to the nurses who are taking that course so they will be better prepared when they meet some of the rheumatic-fever problems.

DR. ELIOT. I understand Miss Ross wanted to ask a question with respect to the education of institutional nurses. Don't you want to put your question then? I am going to ask Miss Jordan to answer it for you.

MISS ROSS. I am interested in knowing if there are any postgraduate courses offered for the insitutional nurse in bedside-nursing care of the rheumatic-fever child during the convalescent stage and also during the acute stage.

MISS JORDAN. So far as I know, there are not. I think we have certain resources for institutional nurses that we don't use. We have a committee in one of our National organizations that is directly concerned with this general question of nursing education—the committee on the education of the nurse in care of the child. Our State committee has considered the orthopedically handicapped child, but has not yet considered the medically handicapped child. I am sure we could. I don't know of any organized postgraduate work in rheumatic fever for nurses. I personally have been asked to go to certain schools of nursing to teach the nursing class about the care of children with rheumatic fever.

DR. ELIOT. Would any one of the other nurses like to speak on the subject of the education of the institutional nurse?

MISS TAYLOR. I am sure the group is not particularly interested in hearing a dissertation on the complete revision of the basic nursing curriculum, but we feel strongly that that is the place to begin the study of this particular subject. More emphasis should be given in our basic curriculum to the study of the healthy child as well as the sick child. I am wondering, furthermore, if we are not making too great a distinction between the public-health nurses and institutional nurses in this field. The special-consultant nurse, whose duties in these programs and whose training we have not yet fully defined, should be a specialist in the pediatric field with some training and experience in care of patients with rheumatic fever.

I should like to emphasize the point Miss Jordan has made, that there are many facilities in the United States and many centers where nurses might go to acquire good pediatric background of pediatric nurses. Short periods of observation in institutions caring for children both in the acute stage and in the convalescent stage and periods of study in a community agency would help the nurse to keep abreast of scientific information and to practice her technical skills in the area of rheumatic fever.

MRS. STAUPERS. The National Organization for Public Health Nursing and our National Association of Colored Graduate Nurses organized a joint committee to provide further education and other opportunities for nurses and I am glad to bring that to Miss Ross's attention. Perhaps we can find some help for Miss Ross and perhaps help other nurses, too.

DR. ELIOT. Now I am going to skip over to the question of getting increasing information to the medical-social workers in this area. I wonder if Miss Bartlett, who is representing the American Association of Medical-Social Workers, won't speak on that point.

Education of the Medical-Social Workers

Miss Bartlett. I think we may say that all medical-social students are taught something about the medical-social problems involved in the care of children with rheumatic fever and heart disease. We can be sure that in a clinic and hospital where medical-social-work students are placed, this will be a part of the program that is emphasized.

Medical-social workers have leaned strongly on the case-work approach in the past. The education committee of our association has been realizing the need to develop material regarding the medical-social worker's role in public medical-care programs, and recently we have been working with the Children's Bureau in an attempt to get some formulation of these aspects.

Because of the development of special aspects of medical-social work, we are just getting to the point where we realize that we shall soon have to think in terms of postgraduate courses and institutes. We have already developed one or two.

Finally, I should like to stress the educational value of a joint meeting such as this. So much of medical-social work is in terms of integration that I wish there could always be such participation as this, particularly in a united attack upon program planning for those of our workers who are going to specialize in this field.

Dr. Eliot. I want now to go over to still another field of interest: occupational therapy. Miss Messick is here to represent that group of workers.

Education of Occupational Therapists

Miss Messick. A couple of years ago at our convention here in Washington the need was recognized for a study of facilities for programs in occupational therapy for cardiac children. Our study-group committee attempted to make a survey of the situation. One of the most difficult jobs seemed to be to find out where such programs are located and where information about them could be obtained. There seemed to be little organization of efforts to care for cardiac children; therefore, a simplified questionnaire was sent out to general hospitals. Thirty-eight were sent out to children's hospitals, 7 to home-service departments, and 16 to workshops. Out of a total of 126 questionnaires sent out, 16 surveys came in completed and a number of other incomplete replies were received. Twenty-seven of the answers stated that their institutions had no work for children in the occupational-therapy field, and 18 didn't respond to this question at all. The committee seemed to feel that the greatest need is for a place where training and research in occupational therapy in this field could be given because we have developed no particular specialty along this line.

I want to say that the association would like to help in any way it possibly can. If any of you have any suggestions about ways in which the association can assist, or if you have suggestions for changes in the type of programs for occupational therapists that are set up, I feel sure they would prove valuable. Many occupational therapists are extremely interested in the field of rheumatic fever, a field that has been practically untouched so far as occupational therapy is concerned.

Summary and Conclusion

Dr. Eliot. Thank you, Miss Messick. The reason I have touched on so many fields of interest is that, taking a long view, the education of personnel who are going to work in rheumatic fever is fundamental. Each of you on the

State level, and each of those organizations whose representatives have spoken, must realize that we will need increasing staff as this program goes forward, and an increasing number of professional people will be needed by the State agencies.

Dr. Huse has suggested that I should ask the State representatives here whether they feel the Children's Bureau could be of help in this area of professional education if we worked more closely with some of the academic institutions that might develop courses and special plans for postgraduate and undergraduate education in these various areas of interest. We might have a show of hands. Would you people like to have us enter that field more than we have in the past to see how much we can develop opportunities for education? I judge, in general, you would be interested in seeing us attempt to do this.

There are two more topics on the agenda, but I am not going to go into them in detail. The question of how we are going to develop institutional facilities for the future is, of course, a large one. We could spend the rest of the afternoon discussing that subject. It is obvious we are going to need additional facilities. I was glad that Dr. Rogers brought out the point this morning that we should give thought to all the various kinds of facilities needed. We also could go on discussing even more fully the question of how we are going to prepare personnel, how we are going to obtain personnel to do the expanded job we have been talking about. I am not going to lead you on into that. You have had enough in these 3 days.

However, before we close, I want to call again on Dr. Jones. Dr. Jones was the chairman of the advisory committee that met with us in September of 1939 immediately after the amendment to the Social Security Act had passed and the money had been made available to start this program. He has known the ins and outs of the work as it has gone forward, and I wonder if he won't close this meeting by telling us what he sees for the future—something of the pattern that is being made by our current situation in the war and also something about the post-war period.

Dr. Jones. As Dr. Eliot indicated, I have been to a number of meetings of the advisory committee here in Washington and have gone through the period in which it became possible to get a general acceptance of the fact that the rheumatic-fever child is a crippled child and then to have funds made available for the care of children with rheumatic fever. Great caution was used in the development of the initial programs and every attempt was made to get personnel of high professional standards and to work out safe and sane programs with many of the precautionary features that Dr. Rogers has so well discussed this afternoon. I think it is quite extraordinary that in a period of a very few short years we now have 15 programs in the hands of competent workers—physicians, nurses, social workers, and other workers who are doing an outstanding piece of work in their States. I don't know of any possible educational program that could be more effective than the initiation and sane functioning of State programs as they have been developed to the present time. It is, of course, with a great deal of pleasure that I see the problem of rheumatic fever rise to the importance of such a symposium as has been going on here for 3 days.

I cannot tell you how you must expand. I think it would not be fitting or proper. But I can hazard a few guesses. I should say that the first thing is to determine what your objectives were and what they are; I think we all realize that the primary objective is to be of service to children. That service is to help make the child as healthy, physically and mentally, as possible by the time

he reaches adulthood so that he may lead a useful, active life. We may further extend that service.

Initial programs would not include actual preventive measures, so far as a nonrheumatic-fever child is concerned, but it seems to me that as we develop experience in the care of the rheumatic child, we must next move on not only to the acceptance of the rheumatic child, the object of our concern and care, but also to the acceptance for care of those that are close to him and who therefore stand a much greater chance of becoming rheumatic-fever patients than those who are not part of a rheumatic family. There can be no question but that the recent work of Dr. Wilson, Dr. Taussig, and others has shown that family incidence is tremendous in this disease. So here we have a unit to which preventive measures can be applied. When we are already caring for one child in a given family, a child who has one to a half-dozen brothers and sisters, isn't it our direct responsibility to try to keep them from getting rheumatic fever?

After defining our objectives, development will depend on evaluation of what we are doing in relation to what our objectives were at the beginning. We have been making such an evaluation in the last 2 or 3 days. It would seem to me most important, when another conference is held, to have an expression of the experience of the State groups.

What has been accomplished for each child who has been accepted for care? Speaking from a medical point of view only, have you been helpful in keeping him from getting recurrent attacks of rheumatic fever, from entering adult life with a crippling condition, or perhaps from dying, as so many such children do, prior to adolescence? I think each one of the State agencies must ask itself right now and every year, What success are we having? It is very difficult to evaluate these things—you saw the differences of opinion that sprang up yesterday as to whether the sulfonamides are a God-given gift to rheumatic children or not. You must realize that over a long period of time two-thirds of the rheumatic children enter adulthood able to carry on a normal, active life. Evaluation is not easy; perhaps now it is premature; but keep that one feature in your minds.

Now that we are at war, everyone here feels that the most important thing he can do is to add to the war effort. That comes first with all of us. It is obvious from the Army and Navy physicians who spoke to us on the first day of the conference that rheumatic fever is manifesting itself as an epidemic disease and that more and more emphasis has been placed on it in the past few years. The experience in herding in this war is identical with that undergone in the last war, but the opportunity for study of this disease offered by the last war was lost. I say to each administrator here that he should bear this in mind, and that States that do not have programs should also bear this in mind. The opportunity to develop and expand in a rational way, with full use of the experience gained through this distressing wartime epidemic pattern, should not be lost again.

I hope very much that studies will be carried out both in the Army and Navy. I think there is every indication that they will be and that these studies will add tremendously to our knowledge of specific preventive measures that can be immediately translated into action in State programs when this war is over. I hope that when the time comes we will be ready in the Children's Bureau, in the individual State agencies, and in other National agencies interested in this and associated problems, to take full advantage of an opportunity that may not come again for a long time. We have done the ground work; it has been safely and sanely worked out. It is a source of great satisfaction to me to look back and

see that in an advisory capacity I had a small part in the development of this program.

I hope lay volunteer organizations will be developed—perhaps not new ones but the extension of the spheres of influence and support of those already established. Such organizations would make it possible for scientific knowledge to be gained that would give you better weapons with which to accomplish your work. It has been truly said that public health goes hand in hand with medical knowledge. As we go along, we must constantly keep in mind the fact that we do need to have basic, scientific information and that, the minute it is available, we want to see that every child gets the best possible opportunity to have the benefit of this new knowledge.

DR. ELIOT. When I opened this conference, I told you what a great satisfaction it was to me that we were holding it and that so many of you had come to it. In closing it I certainly want to say that my satisfaction is far greater than it was 3 days ago. I think from the point of view of the Children's Bureau the conference has been a very great success, largely because all of you have spoken so freely. I hope it won't be too long before we have another such conference and that you will all be here with us again. Thank you very much.

[The final adjournment took place at 4 o'clock.]

CHILDREN'S BUREAU PUBLICATIONS ON RHEUMATIC FEVER

Basic Principles for the Care of Children With Heart Disease in the Crippled Children's Program Under the Social Security Act, by Betty Huse, M. D., Special Consultant in Medical Services for Crippled Children, Children's Bureau. 1940.

If a Child Has Heart Disease or Rheumatic Fever, by Betty Huse, M. D. Reprint from The Child, May 1944 (Vol. 8 No. 11), pp. 163–165.

Medical-Social Problems of Rheumatic Children, by Ethel Cohen, M. S., Director, Social Service Department, Beth Israel Hospital, Boston, Mass. 1940.

Recommendations of the Children's Bureau Advisory Committee on Services for Crippled Children With Reference to Services for Children With Heart Disease. 1940.

Rheumatic Fever in Children, by Betty Huse, M. D. Reprint from The Child, May 1943 (Vol. 7, No. 11), pp. 158–161.

Social Planning for Children With Rheumatic Heart Disease, by Ethel Cohen. Reprint from The Child, January 1941 (Vol. 5, No. 7), pp. 163–167.

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The Virginia Program for Children With Rheumatic Fever, by Louise F. Galvin, M. D. Reprint from The Child, January 1942 (Vol. 6, No. 7), pp. 164–168.

List of Delegates

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